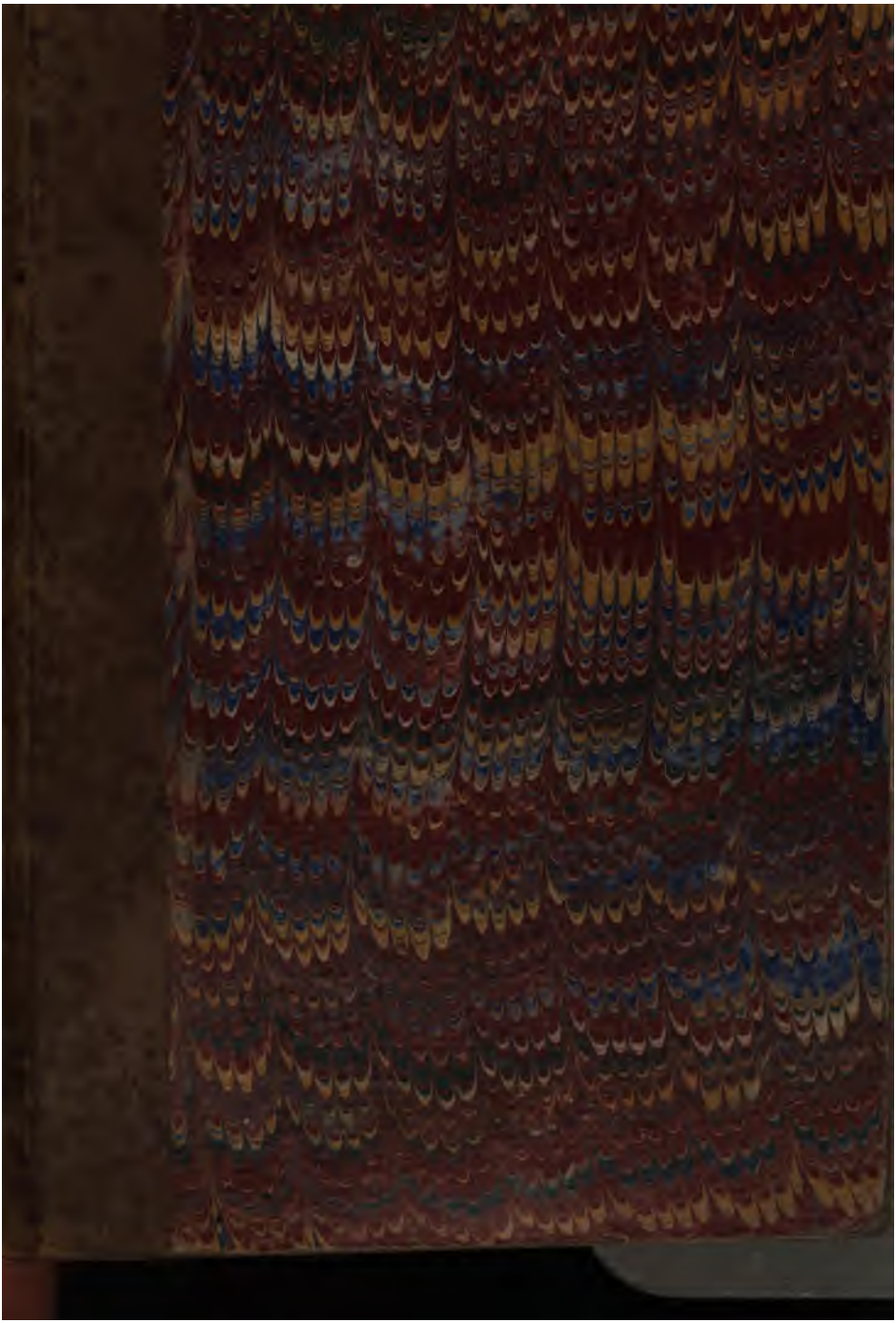

PATENTS FOR INVENTIONS.

ABRIDGMENTS

OF

Specifications

RELATING TO

WRITING INSTRUMENTS AND MATERIALS.

A.D. 1635–1866.

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PREFACE.

THE Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of Invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct Inventions, and many of those filed under the new law of 1852 indicate various applications of the single Invention to which the Patent is limited. Considering, therefore, the large number of Inventions and applications of Inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will, from time to time, become apparent, and be supplied in second or supplemental editions.

W.

This series comprises Abridgments of Specifications relating to ordinary writing instruments and materials, copying presses, manifold writers, and methods of copying, paper clips and files, paper knives, appliances for teaching writing, instruments for affixing postage and other labels, ruling machines, sealing-wax and wafers, metallic fastenings for envelopes, and boxes, cards, &c. for leads and pens. Portable writing-desks and cases are inserted; but convertible writing-desks, or rather writing tables, belong more properly to furniture, and are therefore excluded. Again, the manufacture of paper and the subsequent operations of folding, cutting, &c., and the making and gumming of envelopes, form separate series; but the enamelling of paper for writing tablets, and the incorporation in paper of one or more of the ingredients of the ink to be used in writing thereon (for the prevention of fraudulent alteration) are so closely connected with writing materials that Abridgments of such inventions have been admitted.

The Abridgments marked thus (* *) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

February, 1869.

INDEX OF NAMES.

[The names printed in *Italic* are those of the persons by whom the inventions have been communicated to the Patentees.]

INTRODUCTION.

In this introduction free use has been made of Smith's dictionaries of the Bible and of Greek and Roman antiquities, of Astle's work on the history of writing, of Humphrey's work on the same subject, of Professor Key's treatise on the alphabet, and of sundry articles in the Penny Cyclopædia.

Pens.—The word pen tells its history very plainly; in the eastern and classical languages it is called *reed;* in the modern European tongues its name is derived from a root meaning *feather* or *wing;* the modern Greeks, however, retain the ancient name. The classical Greek word for pen is κάλαμος, the Latin *calamus* or *arundo.* The best reeds were obtained from Egypt and Cnidus. The reed was shaped into a pen and sharpened when blunt with a *scalprum* (*knife*); it was slit like the modern pen, whence Ausonius calls it *fissipes* (*cloven-footed*). Knives and slit reeds and reed cases may be seen in the British Museum. The word *pinna* or *penna* is not found in the sense of *pen* in any author before Isidorus, who died A.D. 636; he writes that the instruments of a scribe are *calamus et pennae,* adding that the former is got from a tree, the latter from a bird. We must not, however, suppose that pens were not made from quills before this date; a thing may be in existence long before there is any written record of it, and authors may have called a pen by its ancient name although they meant a quill pen. In the Septuagint version, the word pen in Job and Isaiah is translated a *writing* or *graving instrument;* in Judges, a *rod;* in Psalm 45, a *reed;* and in Jeremiah, a *rush.* St. John in his 3rd Epistle uses the classical word κάλαμος, so that from about B.C. 298 to A.D. 70, there is not found any Greek word meaning quill pen, and if the Greeks used a quill pen they called it by its reed name.

The word reed is found bearing the meaning of pen in our own language. In the "Early English Psalter" (date 13th century) in Psalm 44, 2 (45 in the Prayer Book version), it is written "My "tunge rede-piper maister writer;" and in another version "My

" tunge rede-pipe mot maister be;" these words being now written "My tongue is the pen of a ready writer." Reeds and canes are still used as instruments for writing by the Tartars, the Indians, the Persians, the Turks, and the Greeks. The Chinese use hair pencils. The Egyptians too still use reeds (says Mr. Lane), "and they suit the Arabic character much better." Reeds and reed pens may be purchased in very many Eastern bazaars.

Dr. Keller of Zurich gives the following description of a Roman bronze pen which was dug up at Avenches :—"The pen consists of " a hollow tube formed of a thin plate of metal, the end adapted " for writing being wider than the upper extremity, of which a por- " tion has perished by oxidation, so that its length cannot be " accurately ascertained. Inside the cleft extremity are traces of " gilding. The case measures about 5½ inches in length; it is " like the pen rather wider at one end than at the other. The " pen with the cleft point resembles in its fashion the metallic " pens of our own times." Little did the moderns, who have obtained patents for making pen and holder from one piece of metal, and for gilding metallic pens, imagine that their novelties were hundreds of years old; they have verified the adage "There " is nothing new under the sun."

Materials for writing upon.—The manufacture of these does not belong to the present series. The ordinary materials on which the ancients wrote were the inner bark or rind of certain trees and plants, skins and shoulder bones of animals, wax tablets, and linen or cotton. The *papyrus*, called by the Egyptians *byblos*, furnished the most common substance for writing upon; both names have descended into nearly all European languages, witness our *paper*, and (that book of books) the *Bible*. So great improvement in the preparation of skins was made at Pergamus that περγαμηνή was and still is in general use all over the world and has handed down to moderns its name *parchment*. The Greek word for paper χάρτης and the Latin *charta* are still retained in modern Greek and in Italian, and are the parents of our *chart* and *charter*.

Stiles or *Styles*.—For writing or inscribing on metal, stone, brick, tile, &c., an instrument named *stile* or *style* (whence the modern *stiletto*) was employed; it was usually of bronze or iron, and shaped somewhat like a modeller's tool, namely, pointed at one end and broad and circular at the other. The ordinary *employment* of the stile was for writing on wax surfaces which

were enclosed in portable wooden tablets, the broad end serving to obliterate what had been written. Tablets were used in very early ages. In Proverbs iii. 3, we read, "Write them upon the "*table* of thy heart." Homer in the Iliad relates that Bellerophon was sent to Lycia with a *folded tablet;* the passage is translated by the Earl of Derby as follows:—

"The king
"Of Lycia sent him forth, with tokens charged
"Of dire import, on folded tablets traced,
"Which to the monarch shown might work his death."

The stile was a dangerous as well as useful instrument. Suetonius tells us that, when Julius Cæsar was attacked by the conspirators, he seized the arm of one and ran it through with a stile; and that Caligula excited the Roman people to kill a senator with their stiles. Seneca informs us that the people stabbed Erixo, a Roman knight, with their stiles. Prudentius composed a hymn to the memory of Cassianus who was put to death by his scholars; they broke his head with their tablets and pierced his body with their stiles.

Before we leave this part, we would recall to the reader's recollection the *ostracism* of the Athenians, so called because the name of the citizen to be banished was written on an ὄστρακον (*piece of tile*), and the *petalism* of the Syracusans, who employed the πέταλον (*leaf*) of the olive for the same purpose; also that oracles were sometimes written on leaves, a custom alluded to by Virgil in the 3rd and 6th books of the Æneid. And again that our word *style* is derived from *stilus;* the ancients many a time *turned their stile* and effaced from their tablets what they had written, before they were satisfied with *the style of their composition.* Horace tells us that in composing verse worthy of being read we shall have often to scratch our head, bite our nails to the quick, and *turn our stile.*

Ink.—This word in some Eastern languages means *black,* in others *pigment;* in Hebrew, Greek, and Latin, *black.* The ink of the Egyptians and Hebrews was evidently of a very superior kind, since its colour and brightness remain to this day in some specimens of papyri and rolls in the British Museum; how far it would be suited to our modern pens is questionable; Mr. Lane remarks that the ink of the modern Egyptians "is very thick "and gummy." The laws of the Hebrews were ordered to be

written with a reed on parchment or skin and with ink made of lamp-black dissolved in gall juice, although sometimes a mixture of gall juice and vitriol was allowable. The ink was carried in an ink-horn suspended at the girdle, as is done at the present day in the East. In Thomson's 'The Land and the Book,' we are told that the scribes "have an apparatus consisting of a metal or "ebony tube for their reed pens, with a cup or bulb of the same "material attached to the upper end for the ink; this they thrust "through the girdle and carry with them at all times." Of the ink of the Greeks we know but little; the only information respecting its manufacture is gained from the speech of Demosthenes on the Crown. He is reproaching Æschines with his low extraction and upbraids him thus:—When you were a lad, you assisted your father in his school *by rubbing the ink* (preparing the ink by rubbing); from this it would appear that the coloring ingredient was obtained by rubbing from some solid substance. The black matter emitted from the cuttle-fish (*sepia*), and hence itself called *sepia*, was also used for ink. Pliny and Vitruvius inform us how the Romans made their black ink; they built furnaces or kilns, which did not allow the smoke to escape; therein they burnt resin or pitch or pine wood; they collected the soot and mixed it with gum and water. Sometimes the base of the ink was boiled lees of wine; and, the better the wine, the nearer the ink approached in colour Indian ink (of which Pliny adds that he knew not the composition). Egyptians, Hebrews, Greeks, and Romans used colored inks. The Scholiast on Aristophanes writes that at Athens the courts of justice were called each by a letter of the alphabet, and that on each door the letter which belonged to it was written in *red dye* or *ink*. The base of the Roman red ink was either *minium* or *rubrica*; such ink was used for titles and initial letters, headings of laws, and the like, and our word *rubric* records its *red* origin. The Romans used purple and green inks also; they sometimes covered letters on pillars and monuments with gold and silver; a part of some verses recited by the Emperor Nero was written in golden letters. Religious compositions being considered "worthy to be written in letters of gold" were actually written so. Sympathetic or invisible inks were known to the Romans; Ovid and Ausonius recommend lovers to write their billets-doux with *fresh milk*, which could not be read *until sprinkled with charcoal dust*. Pliny suggests that the milky sap of certain *plants* might be used in the same way.

Inkholders or inkstands.—There are several in the British Museum; they were made sometimes of metal, sometimes of earthenware, some single, some double, of cylindrical or hexagonal shape, and furnished with a lid and with a ring at the side; one specimen in the British Museum has a chain attached to it. Winckelmann in his second volume states that an inkstand which was found at Herculaneum contained ink as thick as oil and still usable for writing.

Materials for sealing.—The Egyptians used for sealing an earth called by Herodotus *sealing earth*, but there is not any authority for asserting whether it was a simple or mixed earth. Mr. Kenrick says that it was "a grey tenacious earth;" Sir G. Wilkinson says that "documents sealed with fine clay and impressed with a signet "are very common;" and again, "the clay used in closing and "sealing papyri is of very fine quality. A similar kind was em-"ployed for official seals by the Greeks and Assyrians." In Mr. Layard's Nineveh and Babylon there is an account of a large number of pieces of *fire clay* bearing the impressions of seals and supposed to have been attached to written documents. The Greeks originally employed clay for sealing; of the two words in use among them, one signifies *clay*, the other a *bit of dirt*. The Romans used wax, and Cicero in his defence of L. Flaccus (who had been propraetor of Asia) asserts the validity of one document by pointing out that it was sealed *with Asiatic earth*, and the falsity of another by shewing the *wax seal* attached to it. He further informs us that the Asiatics invariably used *earth* for sealing. Sealing wax consisting of lac with a red coloring matter is believed to have been first brought from the East Indies, and the earliest seals of this material that have been found in Europe are of the date of about A.D. 1560. A seal of Prior Collins of Arundel Castle was lately exhibited at the Archæological Institute; it is on bees'-wax; the date assigned to it is the 15th century, and it is the earliest impression at present known in England. To seal a tablet holes were bored through the frame, a thread or string was laced through the holes, and a seal was attached to the ends; the tablet was opened by cutting the thread. In the Bacchides of Plautus one of the characters says to another, "Go in doors and bring out quickly *a stile, wax,* "*tablet*, and *thread*." Impressions of ancient seals as well as of several of our earlier sovereigns may be seen in the British Museum, some in earth, some in wax, and some on metal.

Sometimes the earth or wax was enclosed by a metal ring, and sometimes in a metal case.

Lead-pencils.—The following remarks are extracted from an essay read in 1847, by Mr. J. H. Parker, at the Archæological Institute:—"It is certain that the ancients made use of "common lead for the purpose of ruling lines." "The scribes "used a small round plate of lead, which was found more con- "venient than a leaden style, being less liable to become bent or "to cut the parchment. Their plummets were termed in Greek "παράγραφος or τροχαλός, and in Latin praeductal. With regard "to the earliest use of carburet of iron, commonly called black- "lead, for a similar purpose, it may be observed that Professor "Schönemann has asserted that the MS. of Theophilus (attri- "buted to the 12th century) exhibits lines ruled with a lead "pencil. Conrad Gesner, in his treatise on fossils (Zurich 1565), "describes pencils for writing formed of wood and a piece of "lead, or, as he believed, an artificial composition, called by "some Stimmi Anglicanum (*English antimony*). From the "writings of subsequent authors of the 16th and 17th centuries, "it is obvious that the use of so convenient a material for artists "and draftsmen became more generally known, and in Italy it "was designated Flanders stone, having been introduced from "the Netherlands."

Plumbago or *graphite* is imported principally from Bohemia, Bavaria, Siberia, Canada, and Ceylon; it is found in small quantities in Cornwall, in Ireland, in Scotland, in the Isle of Man, in the Isle of Mull, in Greenland, in Finland, and in Norway. The following history of the famed Borrowdale mine is taken from Chambers's Journal for 1846:—"The discovery "of the substance, which took place about two centuries "ago, was altogether a matter of chance. After a thunder- "storm of more than usual violence a number of trees were "blown down, and the gap made by the tearing up of the "roots exposed a piece of plumbago to view. The value of "the article, however, was not as yet known, and for nearly a "hundred years it was employed only for marking sheep and "polishing steel articles. In the course of time some Jews in "London discovered its utility for drawing, and it was by them "first made into crayons, or what we now call black-lead pencils." The mine must have been worked only occasionally, and apparently *at irregular* periods, for in the history of Cumberland by Wm.

Hutchinson (1794), there is an account of a journey to it on August 5th, 1710. The tourist is the more desirous to avail himself of the opportunity offered of visiting the mine, "for no "search having been made in 32 years, they found that some "pilfering interlopers had carried on the old work till they had "lost it in the rock." In early times plumbago was used medicinally for "gravel, stone, and strangury," in addition to its ordinary employment for preserving steel from rust and for glazing and hardening crucibles. For further details of this mine see Memoirs of the Literary and Philosophical Society of Manchester, 2nd series, vol. 3, 1819, and for an interesting account of the pencil works at Keswick see Chambers's Journal for 1848.

India-rubber.—The following also is extracted from Mr. Parker's learned essay:—"With regard to the means employed for effacing "lines mention is made of the crumb of bread by some early "Italian writers, but this or any other expedient has been superseded by the general use of a foreign production, the caoutchouc "or india-rubber. Of the introduction of this very valuable "material, the following extract from the preface to Priestly's "Perspective, published in 1770, gives as positive a date as we "can well expect:—Since this work was printed, I have seen a "substance excellently adapted to the purpose of wiping from "paper marks of a black-lead pencil. It must, therefore, be of "singular use to those who practise drawing. It is sold by "Mr. Nairn, mathematical instrument maker, opposite the Royal "Exchange. He sells a cubical piece of about half an inch for "3 shillings, and he says it will last several years."

Writing.—Who were the inventors of the alphabet and of writing is a question which has been often asked but never satisfactorily answered. Tradition assigns the invention of them to the Phenicians or Egyptians and tells us that Cadmus introduced them into Greece; this evidently points to an immigration from east to west bringing with it civilisation. Professor Key (see article Alphabet in the Penny Cyclopædia) is of opinion that we "find at times "in the oldest Greek characters traces of a higher antiquity and "purer forms than in those which pass under the more venerable "names of Hebrew, Phenician, and Samaritan." It is natural to suppose that pictorial writing was the most ancient; at first the whole symbol would be drawn, afterwards only the part most characteristic thereof. Thus, an ox would be represented by its head and horns; an eye by an oval or circle with a dot (afterwards

omitted) in the middle; a ship by hull, mast, and rigging; friendship by two hands clasped; fighting by a fist or cross swords, &c. The following extract is from Kenrick's work on Egypt:—"The "monuments and other antiquities of the Egyptians show that "the art of writing was practised among them more extensively "than by any contemporary nation. They seldom raised an "edifice without covering it with inscriptions. There remain "obelisks, statues, funereal tablets in great numbers, which appear "never, except through accident, to have been uninscribed. "Fragments of MSS. on papyrus exist of the earliest Theban "dynasties, perhaps even of the times preceding the invasion of "the Shepherds." In another place he writes:—"The reed pen "and inkstand and scribes employed in writing appear among the "sculptures in the tombs of Gizeh, which are contemporaneous "with the pyramids themselves." In Genesis xxxviii. we read that Judah gave Tamar his *signet*; this took place before the Israelites went down into Egypt, and it is often put forth as a proof that writing was known to them at that time; but it is not certain that signet rings were always engraved with a name or some alphabetical writing; there may have been only an emblematical figure cut thereon. In Exodus xvii., "The Lord said "unto Moses, write this for a memorial in a book" (more correctly *the* book), a proof that Moses was acquainted with the art of writing. The Egyptians used two sets of characters; this is proved beyond doubt by the Rosetta tablet (now in the British Museum); the Greek version expressly affirms that the decree contained in the inscription was ordered to be written in three different characters, namely, the sacred letters (hieroglyphics), the letters of the country (enchorial or demotic), and the Greek. The curious in such matters are recommended to examine the alphabets which accompany Professor Key's treatise and to observe how modern letters have grown out of the ancient ones. Both Egyptians and Hebrews wrote from right to left; some inscriptions, however, of the former run in the opposite direction, and still more are arranged vertically. The Etruscans turned their letters to the left, and there exist specimens of Latin inscriptions with the same peculiarity. "Among the Greeks," we again quote from Professor Key, "there were four modes of writing, one vertical "(κιονηδόν or columnwise), and three horizontal, viz., one with "the words running to the left; another, which soon prevailed "over the rest, turned to the right; and a third, in which the

" direction of the lines alternated, as in the course of a plough, " from which idea inscriptions of this kind are said to be written " βουστροφηδόν or ox-turning wise."

In writing on any hard substance with a stile there was naturally a tendency to give letters an angular shape and to use straight lines all of the same or of nearly the same thickness; but when a split reed was employed, round-bottomed or cursive letters and up-and-down strokes were easier. For example, on a hard substance I was used for J, sometimes for Y, and V for U; but with a reed *i* was used for J and *u* for V. The word *uis* in the cursive hand must have puzzled a copyist who did not understand the context; it may mean *jus* (*right*) or *vis* (*violence*). It is truly wonderful that the editions which we possess of ancient writings are so accurate. Let us mention some of the dangers which have threatened their accuracy and be thankful for the invention of printing, which has tended to create a unity of form, and which will be the best protection against future change. The most ancient MSS. were written without any difference in the size of the letters, without any separation between words, and without stops. Many abbreviations were employed; A stands for not fewer than fifty-nine words (see Palæography, Penny Cyclopædia). Certain letters are frequently omitted in words and at the end of words. Imperfect erasures were common either with a knife, or by drawing a line through a word, or by partially obliterating the old writing with a sponge, and the surface was written on again. (Sometimes both writings are legible, and such MSS. are called *palimpsests, i.e., rubbed, scraped,* or *wiped again.*) Add to all this the negligence and ignorance (and at times the fancied knowledge) of copyists, numerous emendations and interpolations, the confounding similar letters, the transposition of letters, and the mistakes in one copy transferred to another.

Shorthand writing.—Some assign the invention of this art to Pythagoras (born about B.C. 570), some to Xenophon the historian (born about B.C. 444), some to the Latin poet Ennius (born B.C. 239) who, they say, adopted a system of short writing whereby a person was enabled to follow a speaker, and others to Cicero, who at all events employed it. Plutarch informs us that, when Cato made a speech relative to the Catilinarian conspiracy, Cicero dispersed about the Senate house several expert writers, whom he had taught to make certain figures, and who did in *little and short* strokes equivalent to words pen down all that

Cato said. These writers were called *actuarii* or *notarii*, whence come our words *actuary* and *notary*. The art was subsequently improved, and stenography became a fashionable accomplishment with the Romans. Horace, Ovid, and other authors allude to the stenographic art in their works. The Roman shorthand was very different from ours; the abbreviations in general resembled those adopted in ordinary writing; they frequently occur in ancient MSS. as well as in early editions of Latin works. Some passages in the Roman writers, which have been supposed to refer to shorthand, appear to refer to writing in cipher. "There is extant" (Pen. Cyc., Stenography) "a work on the shorthand (notæ) of "the Romans attributed to Tiro and Seneca and printed in "Gruter's collection of inscriptions."

Secret or Cipher writing is of great antiquity. The Spartans are supposed to have invented it as a mode of communicating with their officers when abroad. When a king or general left Sparta, the Ephors gave him a σκυτάλη (*staff*) of a definite length and thickness and retained for themselves another of precisely the same size. When they had any communication to make to him, they cut the material, on which they intended to write, into the shape of a narrow riband, wound it round their staff, and then wrote upon it the message which they had to send to him. When the strip was taken from the staff, nothing but single letters appeared, and in this state it was sent; the officer on receiving it wound it round his staff and was enabled to read the communication. Julius Cæsar is said to have often made use of cipher writing; one method consisted in transposing the letters of the alphabet.

What acquaintance had the Britons with letters and writing before the invasion of the Romans? Authors are very fond of asserting that they could neither read nor write; but if the Phenicians, the Carthaginians, and the Massilians resorted for tin, &c. to the Cassiterides (generally allowed to be Cornwall and the Scilly islands), is it not possible, nay probable, that they communicated some knowledge to the inhabitants? Be this as it may, Julius Cæsar writes that the system of Druidism is thought to have originated in Britain; that the Druids taught their pupils (who were many, *magnus numerus*, some going of their own accord to be trained up among them, others sent by their parents,) to learn by heart a number of verses, which they were not allowed to commit to *writing* for two reasons, namely, that the system might *not be diffused among* the people at large, and that the pupils

might not become careless in cultivating their memory through trusting to *written characters*. He adds that the Druids hold it unhallowed to commit their instruction to *writing*, although in most other matters, in the accounts of the state and of individuals, they use *Greek characters*. There is in the British Museum a beautiful MS. of Cæsar (of about the 10th century) which reads a corrupt passage (Bell. Gall. v. 12) thus; the Britons *use either bronze or gold money or iron rings of a fixed weight for money*. In many editions the words meaning *or gold money* are not to be found; but Mr. Hawkins in his work on the silver coins of England affirms that "it is only about the middle of the "17th century that the editors of Cæsar corrupted the passage." The following is extracted from Mr. H.'s book:—"Coins of gold, "sometimes of silver, and more rarely of copper, are found "occasionally in various parts of the island, which from their "form, fabric, and type, cannot have been constructed upon any "model introduced subsequent to the establishment of the "Romans in Britain. The money of that people is rather thin "and quite flat, and such would undoubtedly have been the "form of British money had it been first made after the arrival "of the Romans. It is, however, on the contrary thick and "dished, exactly after the manner of the Grecian coins, and the "types are such as appear to have derived their origin from "Macedon. That the coins commonly called British have a "Greek origin is beyond all doubt; that they were struck in this "island is also certain, because they are frequently discovered "here and not in any other country, and there is not any period "of its history when such coins could have been introduced after "the arrival of the Romans. Either from commercial visits of "the Phenicians, or through the communications which must "have taken place between Britain and Gaul, Grecian coins "became known in this island and were coarsely imitated by "native artists. These were executed with various degrees of "want of skill, till the intercourse with the Romans improved "the workmanship, and as this becomes apparent upon the coins, "Roman letters are found introduced." Again, in the Pen. Cyc. (article coin) we are told that the earliest coin, which can with the least appearance of probability be attributed to any particular British monarch, bears upon it the letters SEGO possibly for Segonax, one of the four Kentish kings who attacked Cæsar's camp, (B.C. 54); it has also the word TASCIO upon it, which is *seen upon numerous* other coins undeniably British. "The coins

"of Segonax," writes Mr. H. "afford a presumptive evidence "that the Britons were acquainted with the Roman characters "before the invasion of Cæsar." Mr. H. says that the word TASCIO has never yet been explained; but Dr. Birch of the British Museum in 1844 communicated a paper to the Numismatic society, in which he proposed that TASCIO (and on other coins TASCIOVAN) stand for Tasciovan, the father of Cunobeline, and that SEGO is an abbreviation of Segontiaci, the name of the people over whom he ruled. This explanation appeared so plausible that it has been generally adopted, and consequently the coins are believed to be a few years less ancient. Tasciovan's capital was adjoining Verulamium (St. Albans), and his reign lasted probably from B.C. 30 to A.D. 5. Cicero, Julius Cæsar, Dion Cassius, and Suetonius, when writing of the subjugation of Britain all employ words which mean that the tribute imposed on the Britons was a *money* payment; and Mr. Evans in his work on 'Coins of 'the ancient Britons,' asserts that "we are justified in concluding "that the use of the precious metals was known in Britain at the "time of the invasion of Julius;" and again that we should not greatly err if we assign to the earliest of British coins "a date "somewhere between 150 to 200 B.C." If then there existed in Britain, prior to B.C. 55, Greek and (probably) Roman characters and a coinage, the inhabitants could not surely have been so barbarous as they are usually represented.

It will be seen by the subject-matter index that modern inventors have turned their ingenuity chiefly to the improvement of pens, penholders, ink and inkstands, and to the manufacture of ever-pointed pencil cases, fountain pens, and fountain penholders. It is impossible to say what benefit they themselves have derived from their inventions, but the public owes them much for the perfection to which they have brought the said articles and for the low price at which they have enabled several of them to be purchased. The following trade prices bring the possession of the articles within the reach of the humblest:— Metallic pens, 4*d*. per gross (originally 8*s*. per gross); penholders, 4*d*. per dozen; lead pencils, 3*d*. per dozen; ever-pointed pencil cases, 1*s*. 2*d*. per dozen; ink and bottle, 8*d*. per dozen; sealing wax, 1*s*. per lb.; and, india-rubber, 2*d*. (and less) for half a cubic inch, originally 3*s*. for a piece of the same size.

WRITING INSTRUMENTS AND MATERIALS.

A.D. 1635, June 6.—N° 82.

COX, MATHEW.—"The art and misterie of makeing of wafer "seales w^ch^ are more necessarie and secure, and alsoe cheaper "than any way for the sealing of letters or other necessarie "writeingꝭ, and that such wafer seales (being not so good as the "petitioner cann make) are brought out of forraigne partꝭ into "this our kingdome and sould att a farre higher rate then the "petic̃oner will aforde them, to the detriment not only of the "Petic̃oner, but likewise of all our subjectꝭ in generall; in con-"sidera c̃on whereof, and for that many hundredꝭ of poore people "which are vtterly destitute of imployment to relieve theire "great necessities, will hereby be sett to worke," a patent was granted to the said Mathew Cox "for the sole makeing of the "wafer seales, & he wilbe bound to sell one hundred of them for "a penny."

[No Specification enrolled. Letters Patent printed, 4*d.*]

A.D. 1637, December 7.—N° 112.

JACKSON, JOSEPH.—A special privilege "for fourteen years, to "use and ex̃cise within England and Wales the sole making, "casting, and guilding of all sorts of leaden seales, after a way "by him invented, nowe used by the new draps within the same "kingdome and d̃nion."

[No Specification enrolled. Title printed.]

A.D. 1688, February 7.—N° 258.

HOLMAN, CHARLES.—"A new art & invenc̃on of makeing a "certaine powder, which being put into faire water, beer, ale, or "wine, doth imediately turne the same into very good black

" writing ink, and can be afforded very cheape to the generall " advantage of our subiects, especially those in the country and " at sea."

Sole privilege " for and dureing and to the full end and terme " of fourteene years," to " erect, vse, teach, exercise, and put in " practice the said new Invencon," within " our kingdome of " England, dominion of Wales, and towne of Berwick-vpon- " Tweed."

[No Specification enrolled. Letters Patent printed, 4*d.*]

A.D. 1714, January 7.—N° 395.

MILL, HENRY.—The Letters Patent recite a statement in the petition of the patentee to the effect " that he has by his great " study, paines, and expence lately invented and brought to " perfection, an artificial machine or method for the impressing or " transcribing of letters, singly or progressively one after another " as in writing, whereby all writings whatsoever may be en- " grossed in paper or parchment so neat and exact as not to be " distinguished from print; that the said machine or method " may be of great vse in settlements and publick recors, the im- " pression being deeper and more lasting than any other writing, " and not to be erased or counterfeited without manifest dis- " covery."

[No Specification enrolled. Letters Patent printed, 4*d.*]

A.D. 1721, August 12.—N° 434.

DE LA CHAUMETTE, ISAAC.—" The making of divers " engines, machines, and instruments of severall kinde," namely, a breech-loading cannon, gun, and pistol; a gun lock; " two case pistols of which a carbine may be made, and charged " without a rammer;" a method of firing a gun always horizontally; a bomb which bursts at the proper distance; a breast-plate; a sword serving for a bayonet; a powder flask; a machine to cure smoky chimneys; " two snuff boxes, one with a slider, and " the other with a sweep;" a pen-making machine; a peculiar pocket knife; a buckle with a folding tongue; a kind of calculating machine; double counters for the fair drawing of lotteries; a mattress for hospitals; a coach which can neither overturn nor jolt; a method of preventing shipwreck; an expanding candlestick and ring; pointed scissors which may be carried in the pocket

without a case; a machine whereon a bottle or two and glasses may be placed at table; a picture, serving as a tester to a bed by night and as an ornament by day; and a lantern.

[No Specification enrolled. Letters Patent printed, 4d.]

A.D. 1764, March 31.—N° 809. (* *)

CUMMINGS, GEORGE.—"A composition to put on all sorts of "skins, paper, or linen, for the use of drawing or writing on with "pen and ink, or pencil, and rubbing clean off again, and to "form it into a memorandum book, distinguished by putting the "name of each day of the week on the top of each leaf of the "book, and for other uses and purposes." "Take either vellum, "parchment, very fine cloth, or paper, and stretch it in a frame as "tight as possible; then take twelve pounds of white lead and "pound it very fine; then add one third part of the best plaister "of Paris and one fourth part of the best stone lime; well pound "them, mix these well together, and grind them very fine with "water, then take a new glazed vessel and dissolve six or seven "pounds of the best double size over a fire, and mix the above "ingredients in this till it is of such a consistence as to lay on "with a brush; then lay three or four layers on the skin or cloth "as smooth as possible, observing that the skin is dry each time "before a second layer is put on; then take the best nut or linseed "oyl, and to every pound of this oyl add four ounces of the best "white varnish, and mix them well together; then put on three or "four layers of this oyl thus prepared, each time exposing it to "the air till it is thorough dry. This is for the white sort." Other colours may be produced by adding stone ochre, or orpiment or Dutch pink, vermilion, Prussian blue, ivory black, &c.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 7, p. 231.]

A.D. 1768, March 17.—N° 899.

PINCHBECK, CHRISTOPHER.—"A very singular and useful "set of tablets, which I proposed to call my nocturnal remem-"brancer, by which, though the mechanish is very simple, every "person of genius, business, and reflection, might secure all "their night thoughts worth preserving, though totally in the "dark." It consists of a case containing a set of tablets or leaves of asses' skin, ivory, or any other suitable material, which are strung together near the top on a loose ring, and "have

" notches cut on one of their sides, at about a quarter of an inch " asunder." The case has near the top, on two sides, a slot or opening about a quarter of an inch wide, cut nearly across (to direct the writing); and fastened to a third side of it is a " spring " with a returned nose," which fits into the notches of the leaves and holds them firm. To the spring is attached a button with its head outside the case. When the writer has finished the first line, he pushes the button, thereby relieving the spring, and by aid of the ring pulls up the leaves to the next notch. " On the " other side of the case, the pencil is put in a hole for that " purpose."

[Printed 4*d*. No Drawings. See Rolls Chapel Reports, 6th Report, p. 135.]

A.D. 1768, November 25.—N° 906. (* *)

DRING, JOHN.—" Manufacture of ink into a cake or solid body, " called by the name of cake ink." This ink is made as follows: —" Take sweet oyl, vinegar, gauls, coperas, gum arabac, and allam, " mix them well together, and pour it into tin moulds to harden " for use."

[Printed, 4*d*. No Drawings.]

A.D. 1770, June 15.—N° 963.

TETLOW, JOHN.—" A machine for ruling paper for musick and " other purposes, which I call a Tetlow." This machine, which is fixed on a stand, consists of a roller on which " line wheels " are put; these are kept steady in their places by " a kind of " spring or fastener " between each: above the roller is a " pre- " venter to keep the ink from rising in bubbles and making the " lines imperfect;" under it is a trough that contains the ink; and at each end " cheeks to guide or keep true the paper holder " when ruling," and " winches that support the roller, which is " soon put on or taken off." The paper, enclosed in a frame with " slips of pastboard, which form the margents," is ruled by being passed under the machine which turns with a handle.

[Printed, 8*d*. Drawing.]

A.D. 1771, March 23.—N° 985. (* *)

ECKHARDT, ANTHONY GEORGE.—" A new rolling parallel " ruler, either with or without scales, sliding pen, and pencil, for " the purposes of drawing and dividing."

In its simple form this parallel ruler consists of a "flat ruler or "scale" having a perforated moulding "through the centre "thereof in the whole length" in which a steel axis is placed, its mountings being screwed to the ruler; at each end a similarly sized wheel is fixed "for the scale to roll freely upon."

In a second form the two wheels and the feathered edges of the ruler are graduated in inches and parts; indexes are attached to the ruler "to determine the distance of the parallel lines."

The above-described rulers, and those only, "are capable of "being constructed with a rolling cylinder" instead of "a mould-"ing and axis." In this case a cavity is made in the scale, so that the cylinder may be introduced in the centre thereof.

In a third ruler "for drawing and dividing both parallel lines "and perpendiculars, as well as determining their respective dis-"tances," "the two graduated feathered edges" "are to be made "of brass for the convenience of fixing thereon a sliding pen, "pencil, and point, with their sliding spring."

In a fourth ruler "for drawing and dividing parallel lines, per-"pendiculars, and circles, and for determining angles of all "degrees," "a moving circular graduated plate in the centre" is added. This circular plate receives its motion from a pinion "fixed in the axis that runs through the centre of the ruler, and "playing in the teeth of a cantered wheel," "being the under "part of the circular plate;" "and to this is further added" "two folding brass arms" "to serve as a centre occasionally to "produce circles by means of this rule." To reduce geometrical drawings to perspective, a larger or smaller wheel may be placed in lieu of one of the two rolling wheels of the instrument.

Other details and possible modifications are mentioned.

[Printed, 10*d*. Drawing.]

A.D. 1777, June 9.—N° 1156.

FISHER, JOSEPH.—"Universal machine lines for writing and "drawing." The principal parts of this machine are, 1. a frame having the right side grooved or slotted, 2. "three rulers which "are made to move parallel," by means of two pairs of arms mounted on six centres, two on each ruler, 3. two sets of lazy-tongs fastened to the ends of the upper and lower rulers, 4. lines "of fine thin silk," secured to the middle joints of the tongs. A brass plate, carrying a knob and pinned to the right end of the

upper ruler, slides in the groove or slot; by moving the knob down or up "all the lines extend or contract in a parallel direc-" tion." In inferior machines, the tongs are omitted, and the lines are fixed to the arms. "A board or plate covered with white " paper is fixed between the rulers and lines, over which is placed " the paper for writing on. The geometrical squares for drawing " are made to extend or contract by placing four pieces of ma-" chinery" made to move with lazytongs, one set "at each side " of a square frame or drawing board;" the lines are fixed and moved as before described.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th report, p. 163.]

A.D. 1780, February 14.—N° 1244.

WATT, JAMES.—"A new method of copying letters and other " writings expeditiously." This invention includes a "rolling " press" and a "screw press" for copying writings, a liquor for moistening the sheet which is to receive the copy, the writing ink, and the method of obtaining a copy. The rolling press is composed of two iron or wooden uprights; two wooden or metallic rollers; and a double-handed lever applied to the axle of the upper roller. The uprights are connected at top by an iron bar, and at bottom by "a strong plank of wood or plate of metal." The press is secured to the edge of a table by screw cramps. Each upright is slotted near the bottom; in the slots are steel or other springs "which serve to press the rolls forcibly together;" on each spring rests a "brass bolster" to support "the end of " the axis of the under roller." The screw press consists of an iron or wooden frame mounted on a wooden or metal base, and a screw having a double-handled lever fitted to its square top and a block of wood or metal fastened to its lower extremity; the screw works through a threaded hole in the top of the frame. The written paper and the copying paper are laid on a board and covered with a piece of cloth; the whole is passed between the rollers or submitted to the action of the screw press. The copying paper, which must contain neither size nor glue nor gummy matter, is moistened either with water or with a liquor composed of distilled vinegar, sedative salt of borax, oyster shells calcined to whiteness, and the best blue Aleppo galls. The writing ink is made up of spring water, Aleppo galls, green copperas or green vitriol, gum arabic, and roach alum. The patentee details the

proportions and his method of manufacturing his copying liquor and writing ink; he also mentions substitutes for some of the ingredients.

[Printed, 6d. Drawing. See also Repertory of Arts, vol. 1, p. 13; Engineers' and Mechanics' Encyclopædia, vol. 1, p. 400; Rolls Chapel Reports, 6th Report, p. 165.]

A.D. 1781, July 28.—N° 1301.

BECKWITH, THOMAS.—"Making crayons for drawing and "other purposes of various colours, superior to any heretofore "made." The compound, which "is to be put into grooves of "wood, and formed into crayons or pencils," is made of "colours "prepared from the purest mineral, animal, and vegetable pro- "ductions"; with such colours as require it, is mixed "a pro- "portionable quantity of the most pure impalpable mineral calx, "or the choicest terrestrial fossil substance," "adding thereto "due proportions of well dephlegmated essential oils, and of "animal oleaceous substances, so as to render the mass or com- "pound of a smooth and uniform texture, and yet more so by "the means of mollification, inspissation, and exsiccation by "fire."

[Printed, 4d. No Drawings. See Rolls Chapel Reports, 6th Report, p. 166.]

A.D. 1783, December 17.—N° 1409.

JONAS, JONAS.—"New-invented sliding lead pencils." The "raised part of the bottom" side containing the lead slides in a dove-tail groove in the other side. Beyond where the lead ends, a small spring or pin is let in, which slides along "a groove in "the middle of the dove-tail groove." "About an inch of the "raised part of the bottom at the end where there is no lead" is cut off, and the vacancy thus caused in the dove-tail groove of the top side is filled by a "stop" glued therein, which prevents the raised part being moved further in that direction. At the other end of the pencil a wire, fixed in a hole drilled through the top side, "prevents the spring or pin from sliding "any "further, and hinders the pencil from coming asunder." Two notches are cut "for the conveniency of sliding the parts back- "ward and forward;" the pencil is made round, marked on the top with a six-inch rule, and polished.

[Printed, 4d. No Drawings.]

A.D. 1786, December 14.—N° 1576.

WESTWOOD, OBADIAH. — Making inkstands and various other articles. The substance of which they are manufactured is made by "cutting, bruising, or grinding" rags, remnants, or any articles "made from or composed of silk, hemp, flax, or cotton," until the same are of a fine texture; it is then mixed with a strong paste made of glue, flour and water, or other adhesive ingredients; next "is added a small quantity of rosin, oil, and "Spanish brown, red lead, or umber, or other binding articles"; the compound, when "well kneaded or worked together," is made into flat cakes by means of moulds, or into other shapes by hand; these, after being dried in a stove or oven, are cut into a suitable form and put into metal moulds with designs engraved thereon. Heat is again applied sufficient to soften the composition for receiving the impression; the moulds are put, while hot, under a press; the pressure gives the composition the intended shape and sufficient hardness for dressing up and varnishing. Several coats of varnish are then put on; heat is again applied, and the inkstands are thereby "perfectly deprived of flexibility and secure "against the penetration of damp or wet. Lastly, they are polished, and ornamented or inlaid.

[Printed, *4d.* No Drawings.]

A.D. 1790, August 21.—N° 1774. (* *)

PHIPPS, JOHN.—"A method to facilitate the acquirement of "several of the useful and polite arts by an easy, effectual, and "expeditious manner of teaching writing and drawing, which is "done by constructing or fabricating the molds, wove or washing "wires, or other wire in or on which paper is made, so that every "sheet shall come out of or from them properly adapted for the "purposes, when finished by the maker in the usual manner, by "having the lines made and the copies set for writing, and the "outlines and sketch for drawing, by what is called the water "mark, for the learner to trace over:" and this is to be effected by causing the paper to receive from the moulds an "impression "or delineation for the learner to trace over."

[Printed, *4d.* No Drawings.]

A.D. 1799, April 11.—N° 2305. (* *)

BRUNEL, MARC ISAMBARD.—"A certain new and useful "*writing and drawing* machine, by which two or more writings

" or drawings, resembling each other, may be made by the same " person at the same time."

A machine "for making two writings or drawings of the same " person at the same time," consists of a sliding board which is carried by "a desk with folding hinges," and which receives the surfaces to be written or drawn upon, and supports the upper machinery that communicates the motion of the pen in the writer's hand to that which makes the duplicate writing. The upper machinery is supported by means of uprights, and consists of an oblong horizontal transverse frame fixed thereto, with which is connected an upper frame (at right angles to the said oblong frame); the upper frame (called "the autograph") has its length at right angles to the oblong frame, and can move along the said oblong frame parallel to the writing by means of traversing wheels; the said upper frame carries an oblong interior frame, as well as centres and beams that connect the pendulous pens and their adjustments. The interior frame vibrates on its longest axis by means of centres in the exterior frame, and carries the centres on which the two metal "beams" from which the pens hang are free to vibrate; the inner ends of the beams are connected together by a pin and slots. A rod extends from one penholder to the other. These arrangements, in connection with minor adjustments, enable the second pen to copy the motion of that in the writer's hand.

An extension of the rod from the penholder, and an additional rod parallel thereto, communicate motion to other pens if required.

Folding and other modifications of the instrument are set forth.

[Printed, 10*d*. Drawing. See Repertory of Arts, vol. 13, p. 153; and Rolls Chapel Reports, 6th Report, p. 195.

A.D. 1803, September 24.—N° 2735.

HAWKINS, JOHN ISAAC.—" New machinery and methods for " writing, painting, drawing, ruling lines, and other things, and " for applying parts of the aforesaid machinery to other purposes." For writing, two or more pens are affixed "to a horizontal and " perpendicular parallel ruler," so that no motion in any direction " can be made by one of the pens without moving the other or " others in a similar manner." By the same machine as many lines can be ruled at once as there are pens attached to the parallel ruler. *The outer bar* of the horizontal portion of the ruler has a

pivot in each end working in studs which are screwed to a desk; the inner bar also has a pivot in each end working in studs. The pivots of the upper bar of the perpendicular portion work in studs which are screwed to the upper part of a "suspending frame," while the pivots of the lower bar work in studs which (as well as the studs in which the inner bar of the horizontal portion works) are made fast to a crossbar. Through this crossbar pass crooked arms, "turning on their axis," and having a pen attached to each by means of sockets. "When more than two pens are used it is "necessary to widen the machine and add the pens" to the crossbar. The inkholders are "as many as there are pens and placed "at the same distances, so that every pen may dip in ink at the "same time." The studs in the suspending frame may be moveable. The paper "is held at its upper end by two plates of brass "or other metal, the one plate let in and screwed to the lower "part of the suspending frame flush with the plane of the desk; "into this plate are rivetted several studs with mortises in them "projecting through holes in the upper plate;" wedges joined to a rod are put into the mortises, and a lever moves the rod, thereby forcing in the wedges and holding the paper tight. "A metal "ruler is laid on the paper near to the place of writing to keep it "from rising when the pens are lifted up;" and spiral springs "support the weight of the apparatus." The action of the machine and pens is described in the specification. For ruling lines, either of two apparatuses may be put into the machine instead of the crossbar; one has "a canal to contain ink, which "will run through the slits and mark lines on the paper over "which it was drawn;" the other "is to be supplied with ink by "dipping in a shallow trough;" drawings of them are given, but no further description. For writing "two different sizes at "once," an apparatus is used consisting "of two pantographs, "whose planes and the plane of the desk or table whereon the "machine acts coincide at their fulcra, and from thence diverge at "an angle of from five to ten degrees each plane from the other." Separating bars are united to the pantographs by universal joints, "whose centres are in the centres of the joints of the pantographs "as well as in their planes;" from them proceed arms carrying sockets for pens. The nib of the pen must be "in a line with the "axis of the separating bar to which it is attached," otherwise the writing of the other pen will be so distorted "as to render it "*illegible;*" *to make it* legible the writing "must be retraced by

" a similar instrument." A " pocket machine to write memoran-
" dums on " is described at length: a marking point is fixed to a small pantograph in a case, and a slip of paper, stretched on two rollers, " is moved along every time the line is written, so that a " person can write memorandums, &c. in the dark without any " fear of writing two lines on one place." The remainder of the specification describes the arrangement of the apparatus:—1. for painting or drawing two or more pieces at the same time of the same size or of different sizes; 2. for drawing likenesses; 3. for taking outlines of landscapes; 4. " a parallel ruler applied to the " purpose of turning a number of cranks in a row," and " to the " sun and planet wheel."

[Printed, 1s. Drawing. See Repertory of Arts, vol. 4 (*second series*), p. 327.]

A.D. 1804, June 20.—N° 2774.

PYKE, LYON.—" A certain improvement on pencils, which I " intend to denominate Pyke's patent improved pencils." The pencil, either square or round, is from five to six inches in length, " $\frac{5}{8}$ of cedar wood," " with a guage or rule on the back of the " receiving part." The rule is made of metal, ivory, bone, or anything " susceptible of being engraved, stamped, or marked " on," and " is marked as a measure " by eighths of an inch. " The pencil contains two slide pencils, one at each end;" the one " of black lead of the best quality," the other " for creta " gallica (or for crayon of all sorts)." As " the inlaid guage or " rule part will last or wear out many slides," the patentee engages to sell " separate slides or pencils of two lengths to fit the " guage or rule part."

[Printed, 6*d*. Drawing.]

A.D. 1804, December 19.—N° 2797.

PASQUIER, STEPHEN.—" A new manufacture, system, or " method of writing, printing, engraving, drawing, painting, " stamping, working, and using certain characters, figures, instru-" ments, and machines for facilitating correspondence and other " literary operations." The description given in the specification relates almost entirely to a mode of correspondence called by the patentee " cryptography." Each alphabet is arranged " within " four horizontal and two perpendicular lines," forming three squares; in each square are nine letters arranged in a certain

order; sometimes six horizontal lines are used. If the alphabet of any language has not so many letters, the vacant places are filled up with a repetition of such as "are thought to be more "frequently used;" if more, they are added at top and bottom or at one side. Each party must be possessed of a copy or be well acquainted with the particular place occupied by each letter in each square. The patentee gives drawings of a great variety of figures intermingled one with another; every line straight or curved, "running rather downwards than horizontally," is to be considered as perpendicular; every one from right to left, as horizontal. The writer selects one of these combined figures and makes dots thereon; each dot represents a letter and is put on a spot in one of the figures corresponding to the spot which it occupies in the key, each figure or part of a figure being reckoned as three squares. Another key is filled with numbers, and directions are given for its use. The patentee briefly describes a machine "which may be of use to the deaf and dumb for conversation;" it is composed of "cylinders moving the symbols," keys or springs acting on the cylinders, and an elevated part whereon the symbols are exhibited. He describes also a "writing, reading, and tracing "desk:" the frame is hinged, the upper portion being kept at an inclination by a support and a rack. A circular frame, in which is a plate of glass, turns round in the upper portion by the aid of two notches; it is secured by four bolts. A brass rim, fixed with four spring pins, keeps "anything laid over the glass in its place."

[Printed, 3*s.* 6*d.* Drawings.]

A.D. 1806, October 7.—N° 2972. (* *)

WEDGWOOD, RALPH.—"An apparatus for producing dupli-"cates of writings."

"Duplicate paper" is made by smearing thin paper with oil, and "carbonated paper" by spreading on it carbon or other coloring matter finely levigated in oil. To write singly, a leaf of carbonated paper is placed upon a smooth metal tablet, a sheet of the duplicate paper is laid upon this, and the writing executed on the latter with a style "made of agate ground and polished "to a smooth round point." To write doubly, a sheet of writing paper is laid on the metal plate, a carbonated sheet upon that, a duplicate sheet, upon which the writing is performed, laid over *all*. "To make a farther increase of writings from an original

" one, I use a set of types and a type tablet, and for shortening " the handwriting the types can be reduced to one figure, namely, " a point, but more figures may be used if seen convenient. " These convey the idea of any letter by the position in which " they may be placed in a square or other formed figure printed " or otherwise marked on the writing paper, which square I call " the basis of the letters, and the paper 'character paper.' . . . " The type tablet consists of a piece of flat metal or any other " material . . . perforated with holes or sockets to fit the types. " On the top of the type tablet is engraved or otherwise marked " squares, corresponding with those on the character paper upon " which it is intended to write or print." The types are rubbed with bees-wax to prevent their shifting in the sockets, and a plate placed at the back of the tablet to regulate the distance they are to be pressed through the sockets. " In order to fix the " types previous to taking off impressions, melted lead or any " other substance may be run into the tops of those sockets " which are vacated by the depression of the types which have " been used for the composition of any work, the lead uniting " the whole; this I call a stereotyped tablet." This tablet may be printed from on " character paper " in a common press, care being taken to place the paper so that the squares correspond with those on the tablet; " or leaves of thin character paper and " carbonated paper may be laid alternately upon each other, and " upon this the stereotyped tablet is pressed in any manner " found most convenient. By this means, with a single pressure " a multiplicity of impressions are formed at once. To write " with the new characters, I take one, two, or even six layers of " duplicate paper, on which is stamped or printed the basis of " the letters. Betwixt every two leaves I lay a leaf of carbo- " nated paper, and over all I lay the type tablet, each square " of which must be exactly over the squares or figures in the " character paper so arranged, and when thus laid, with the " point of a metal or other hard pointed style I press down each " type which I may require to form a word, from which act six " copies are produced on the paper underneath." The lead in the sockets can be melted away and the composition of a second page proceeded with with the same types.

[Printed, 4*d*. No Drawings. Repertory of Arts, vol. 11 (*second series*), p. 216; Rolls Chapel Reports, 7th Report, p. 192.]

A.D. 1808, February 22.—N° 3110.

WEDGWOOD, RALPH.—"An apparatus for producing several "original writings or drawings at one and the same time which I "call a Pennœpolygraph or pen and stylographic manifold "writer." This invention "consists in so disposing of two or "more sheets of paper or other writing materials so that they "may be written upon at once with double-pointed pens," or with "two pens or styles so combined as to be held in the hand "as a pen is commonly held." "If it be required that both the "papers to be written upon should be in the usual form," they are connected by machinery; if the usual form of one of them can be dispensed with, "linear copying paper" is used, which consists of a sheet of paper with alternate spaces cut out, so that when it is laid on a sheet of writing paper, one point of the double pen may be on a space of the linear, and the other on the sheet underneath.

The pens are combined by being fitted into "a double spring "socket," and are kept "in a parallel situation" by a pin in each socket, sliding in a groove in each penholder. Or the sockets may be made separate, and kept together by "two sliding clasps," one of which "is soldered to the lower socket;" the distance between the pens is regulated by a screw. The pennœpolygraph consists exteriorly of an oblong case and lid in which two frames on wheels run one into the other; each frame has a rack, that of the inner passing above and that of the outer below a toothed wheel turning on a spindle which lies across the middle of the oblong case; the spindle and the toothed wheel are turned by a "handle or mill "head" outside the case; one leaf of paper is stretched over the inner frame; one edge of another leaf is held by a clamp fitting on to the outer frame; the leaf then passes under a bar at the inner end of the frame, is doubled over it, and lies the length of the frame; when brought into position one line may be written on each paper simultaneously with the double pen; the handle of the spindle being then turned will cause the line on the upper leaf to disappear under the bar, and that on the lower leaf to move from the writer in front. Another machine has two wedge-like straining boards, at the thick end of each of which is a roller turned by a key; the papers or parchments are made each cylindrical by being united at the ends; they are then put over the

straining boards and kept stretched by "2 weights in the form of "rollers" hanging in the loose part below. These two boards with their narrow ends together are placed in a stand, so that the upper surfaces of the paper are in the same plane; outside the stand pulleys connected by a string are attached to each roller. After a line has been written on each paper, by turning the key in either roller, both cylinders of paper revolving in the same direction will present fresh space for writing. "To keep the lines at "any given distance, if desired, wheels and spring catches may "be annexed to one of the pulleys." A pocket apparatus is made as follows:—It has only one straining board; the roller, toothed at one end, is attached to a separate frame which moves in a groove on each side of the straining board; the roller and frame are slided in and out for the purpose of tightening the cylinder of paper by a spindle with toothed wheels working in racks in the grooves; the second paper is attached its whole length to a bar of thin metal, to which a rack is fastened; underneath the roller a pinion-wheel works in its toothed end, and at the same time works in the rack on the bar, and so turns both papers together. An inkstand suitable for the double pen consists of a "cylinder "with a closed top;" a piston forces the ink through sponge into an oval cistern communicating with the lower end of the cylinder; on the side opposite to the cistern is a wafer-box."

[Printed, 3*s.* 10*d.* Drawings. See Repertory of Arts, vol. 15 (*second series*), p. 193; Rolls Chapel Reports, 7th Report, p. 199.]

A.D. 1808, March 14.—N° 3118.

DONKIN, BRYAN.—"A pen upon a new construction." The pen, of any "metal or material fit and proper" for the purpose, may be made, first, of two separate parts, "flat or nearly so," with "those parts of the flat sides opposed to each other, and "forming the slit of the pen, rather thicker towards the points, "in order to prevent the pen from spluttering." They are then put into "a tube or pipe or other fit receptacle," "applied to each "other in an angular position," and "do constitute a pen." Secondly, "of one entire piece" (still preserving the flatness instead of the usual cylindrical form) and bent to the proper angle before it is inserted into the tube. "For the purpose of "obtaining a variable degree of hardness" for the pen, whether made of one or two pieces, the "sides, when affixed to a proper receptacle," are inserted into an outer tube, in which "the pen

" may be drawn backward or forward, so as to alter the stiffness " of the spring." Or "a greater or less degree of elasticity" is obtained "by introducing two pieces of wire, of an appropriate " shape, into the cavity formed between the flat sides of the pen " and the outer tube."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 18 (*second series*), p. 138; and Rolls Chapel Reports, 7th Report, p. 200.]

A.D. 1809, March 4.—N° 3214.

FÖLSCH, FREDERICK BARTHOLOMEW, and HOWARD, WILLIAM.—"A certain machine, instrument, or pen calculated to " promote facility in writing, and also a certain black writing ink " or composition, the durability whereof is not to be affected by " time or change of climate." "The object to be attained by the " use of the above inventions (when used together) is to produce " two or more impressions by one effort in writing." The pen " is made of glass, enamel, or any sort of stone or metal," through which a hole can be drilled. The hole at the point of the pen " is very small, but becomes larger a trifling distance therefrom." The pen is polished at the back in the usual way. The composition consists of Frankfort black and butter (without salt); "the " butter is to be melted and in that state mixed up with the Frank- " fort black," and "then ground very smooth on a stone"; the proportion may be "of equal quantities in weight." Thin wove writing paper is smeared regularly over (on one side only) with the composition while warm, and a day or two after the superfluous black is to be wiped off. The paper is then "to be " screwed up very tight in a press," blotting paper being placed between each sheet; it may be taken from the press in about forty-eight hours, "and is generally fit for use in about a month." These sheets are laid alternately (the prepared side downwards) with sheets of writing paper, and the ink (common writing ink) " flowing from the point of the tube will give one impression, and " the other impression or impressions will be formed on the under " sheet or sheets from the inked paper or composition."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 15 (*second series*), p. 206.]

A.D. 1809, May 9.—N° 3235.

FÖLSCH, FREDERICK BARTHOLOMEW.—"Several improve- " ments on certain machines, instruments, and pens, calculated

" to promote facility in writing." The pen (or more properly the pen and holder) " which may be made of any sort of metal," is divided into three parts, the box, the tube, and the socket, " which " may be joined together by screws or socket joints." The box contains first, a small rod, one end of which passes through a hole in its bottom (but is not so thick as to fill the hole) with a valve or plate, covered with leather, fastened to it, while the other end screws into a knob; and secondly, a spiral spring, which presses upwards against the knob, and keeps the valve or plate " close to the bottom of the box." At the lower end of the tube is a small pipe " for the ink to pass through into the socket." The socket, the lower part of which " is made in the shape of a " common pen with a slit up the nib," is hollow, and has a hole in the front " to admit the air, and to adjust the quantity of ink " it will bear." " The cradle or sloping part " has a plate soldered on the front of it, the lower end fitting " nearly close to the " inner part or hollow of the nib, but left loose and in a slanting " direction towards the point, and below the top of the slit." The " lower part of the plate " may be made in a separate piece and fit into the socket by means of a groove. The lower end of the socket may be made angular, " with a plate to the front of it, " soldered and fitted nearly close to it," or with " a loose plate " fitting into a groove in the socket; and then " the nib has no " slit, but a small notch or groove at the end," and there must be an air hole in the plate. With " this pen you write with the back " or angular part towards you." The box and spring may be done away with by screwing the knob at once on to the tube, and making an air hole within the screw part of it, which " will " admit air into the tube by unscrewing the knob a little."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 16 (*second series*), p. 65.]

A.D. 1809, September 23.—N° 3260.

BRAMAH, JOSEPH.—A new method of making pens, pen-making machines, pen-holders, and fountain pens.

The barrel of the quill is severed from " its feather part " so that a pen can be made at either end, or, by dividing " the barrel from " one end to the other longitudinally " four pens may be produced out of one quill; or the barrel may be divided " into three and " even four parts " and cut " transversely into two, three, four, " and some into five lengths," and a pen made " at each extremity " of these lengths." " A straight round stick " tapered at the

extremity is the only handle necessary for the first-named; the latter require "a socket, made either of the barrel of a quill, " silver, or other metal," and are held fast between the socket and a handle thrust into it. A machine for the more accurate manufacture of these pens is made as follows:—" Two pieces of " steel of a scantling size, of about three-eighths of an inch by " two-eighths, and of about one inch or inch and a half in " length," are fixed in a frame " by the side of each other, having " between them on the two of their broadest sides a thin piece of " steel," called a lancet, for cutting the slit, " of the same size " in its width, and about the thickness of a fine watch spring," but considerably longer than the side pieces. The ends of these pieces " are filed upon the bevil, or diverging from each other on " the inside;" they are then " hardened and properly tempered," so as to be capable of receiving and retaining a sharp cutting edge. The lancet is " sharpened in a proper form," " having the " extremity of its blunted end above the top ends of the side " pieces," so that when the whole are fixed in the frame and fastened with a screw, "the lancet can be tapped down with a " hammer " and rendered capable of an accurate adjustment. " The whole is fixed or connected to the slider or ram of a small " fly press." Beneath a "concave or convex" counterpart of very hard wood or metal is driven tight into a horizontal groove in the " bed of a cutting press."

Instead of the common stick, the handle of the penholder may be "a hollow tube of silver, or any other metal or materials " proper for the purpose," taper at the lower end to fit into the socket, and with a small perforation "a little distance from " the point," the upper end being made air-tight with a cork cap, or otherwise." The tube is made " so thin as to be readily " compressed out of circular shape by a small pressure between " the thumb and fingers which hold the pen." If a larger supply of ink be required than such a tube will hold at one time, a bulb may be added at the upper extremity or in any other part. Instead of a stationary stopper a piston " may be slided " down the interior of the tube to force down the ink to " the pen by the hand or screw, &c." Any common pen may be converted into a fountain pen by scraping that part of the quill where the thumb rests, until it is "so thin that the end of the " thumb will be a little more than the necessary force for holding " the pen," and by inserting " into the open end of the pen above

" the mouth " a small cork, " or any substance calculated to " operate as a stopper," having previously made " in the part of " this stopper which falls in contact with the back of the pen " above the slit " a small groove " not larger in dimensions than " the smallest pin hole, longitudinally along the surface " thereof. In order to complete " this important system of writing," the patentee makes for offices, in which several writers are employed at the same time, " reservoirs," one of which may be placed on a shelf " of sufficient altitude above the desks to cause the ink to " be easily conveyed therefrom by a small descending main to " each stationary desk;" into each main is inserted " a very " small cock at which each writer can fill the hollow fountain or " handle of his pen " when exhausted of its ink; and to these cocks may be joined by a screw " a very small flexible tube (made " of leather or other materials fit for the purpose)," so that the lower end thereof may be screwed on to the top of the hollow handle of the pens. " Instead of the methods above described " for letting down the ink from the hollow handle or tube into " the pen," there may be made in the top of the handle " a small " perforation for the admission of air," which may be stopped or opened " by means of a small valve, slide, or otherwise."

[Printed, 6*d*. No Drawings. See Repertory of Arts, vol. 18 (*second series*), p. 65; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 277; Rolls Chapel Reports, 7th Report, p. 205.]

A.D. 1810, October 8.—N° 3395.

MANLEY, EDWARD.—" An apparatus for writing." It consists of two parts, a " hand guide " and a " thumb stop." The former, made of metal, bone, wood, or other materials, is " to be buckled " or otherwise fastened on the arm behind the wrist," " to sup- " port the hand, keep it steady, and in a right position." As to shape, " it may be an inclined plane, square, oval, or other " form." The latter, either of metal or other material, is " to be " screwed or otherwise fastened on the pen to prevent it from " being held too short, and so fixed that the nib may bear properly " on the paper."

[Printed, 6*d*. Drawing.]

A.D. 1814, August 17.—N° 3837. (* *)

KLEFT, HENRY WILLIAM VANDER.—A " method of construct- " ing a walking staff to contain a pistol, powder, ball, and screw

" telescope, pen, ink, paper, pencil, knife, and drawing utensils." The staff is made of brass and may be covered with any suitable substance. "The shape is round and rather conical, tapering " from the head to the point. It is divided into nine parts, " principally tubes (exclusive of the cap or head, and the top or " lid of the inkstand), which are all screwed together, except " that part containing the pistol, which is fastened by means of " two spring catches fixed opposite to each other."

The first division is an inkstand, on which the cap of the staff screws.

The second part serves for the handle of the pistol, and also contains a penknife, pen, and black-lead pencil.

The third part receives the pistol, which can be immediately disengaged from the case and from the lower part of the staff, on pressing the spring catches.

" The fourth part is about eight inches in length, and forms a " telescope, with two or more sliding tubes."

The fifth part carries writing or drawing paper.

The sixth part contains Indian ink and hair pencils.

The seventh part contains a turnscrew for taking off the fore part of the pistol barrel.

The eighth part contains gunpowder.

The ninth part contains the pistol balls.

" The eighth and ninth parts are made of brass, and form " together the ferrule of the shaft."

[Printed, *4d.* No Drawings. See Repertory of Arts, vol. 26 (*second series*) p. 88.]

A.D. 1815, March 14.—N° 3896. (* *)

BELL, WILLIAM.—" New-invented improvements in the appa- " ratus for copying manuscript or other writings or designs." The invention (to be used with N° 1244) consists in a mode of damping the sheets of a book on which copies of the writing, &c. are to be taken. The paper containing the writing to be copied (executed with a gummy or mucilaginous ink) is placed between the leaves of the book, which must be of unsized paper. On the opposite side of the leaf to the writing is placed a damping-plate of metal, pasteboard, &c. covered with thin cloth which has been damped by being previously wrapped round with wet flannels. The whole is then placed in a press, and the ink of the copy

forced by the pressure through the leaf, at the back of which it may be read.

[Printed, *4d.* No Drawings. Repertory of Arts, vol. 27 (*second series*), p. 129; Rolls Chapel Reports, 8th Report, p. 104.]

A.D. 1818, October 31.—N° 4299.

WATT, CHARLES.—" Gilding and preparing quills and pens by " manual labour and chemical operations, so as to render them " more durable and useful."

" The quill pen, after having been well cleaned, is to be dipt " for 10 minutes into a dilute aqueous solution of the nitro- " muriate of gold." When well dried, it is to be " exposed in a " close vessel to the action of phosphuretted hydrogen gas until " a pellicle of revived gold appears." It is then to be removed, and " suspended in another close vessel over sulphurous acid gas " until the gold is perfectly reduced. After this revival, it is to " be dried and dipt in the same solution of gold for five minutes. " It is again to be dried, then revived by the sulphurous acid as " above described. The dipping into the solution of gold, and " reviving by the sulphurous acid, are to be repeated until a " sufficiently thick coat of gold be produced."

[Printed, *4d.* No Drawings.]

A.D. 1819, July 8.—N° 4389.

SCHEFFER, JOHN.—" A machine or instrument for writing, " which I denominate the penographic or writing instrument," consists of an external metal case, having at the top " a stopper " of cork or any other suitable substance," and near the bottom a " cock tube," at the upper end of which is a cup fixed in the case as nearly air-tight as possible. Inside the case is an elastic tube " formed of part of a goose quill covered with sheep's gut," which fits into the cup. " A ground valve or plug, fitted into " and passing completely through " the cock tube, is acted upon by a lever. The nib, formed of part of a barrel of a quill or other suitable material, is inserted between the lower end of the case and cock tube, " a cavity being there formed for it by filing " away a portion of the upper part " of the latter. " A small " presser is placed within the external case and in close contact " with the elastic tube," and a stud forming part of the presser " passes through a slit in the outer case, far enough " to allow a

thumb piece to be soldered or rivetted upon it. The valve being turned by the lever, a slight pressure on the thumb piece will cause a supply of ink to descend from the elastic tube on to the nib. Instead of the valve and lever, " a screw cock, plug, or " valve " may be used, with a hole drilled therein, so as to unite with the hole in the cup tube.

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 45 (*second series*), p. 133 ;(London Journal (*Newton's*), vol. 1, p. 86 ; Rolls Chapel Reports, 8th Report, p. 134.]

A.D. 1819, December 20.—N° 4426.

LEWIS, JAMES HENRY.—" An improvement on, substitute for, " or addition to, pens as usually employed in the art of writing, " which I denominate caligraphic fountain pens." The body or holder of these pens is the barrel of a quill, in the bottom of which a small puncture is made; in the upper end is fixed a short metal tube " in order to distend it and preserve its cylin- " drical form," and upon the outside is placed another short metal tube, " with a border or rim round it ; " to this tube " is " accurately fitted another tube or cap," which when on closes that end of the barrel. A metal tube, of proper form and size to receive a short pen within it, is slipped over the lower end of the barrel and completes the pen. When the barrel is filled with ink, and the cap put on, the pressure of the finger and thumb will cause a supply of ink to flow to the pen. If the flow be too great, it may be lessened by placing a small piece of sponge within the lower end of the barrel. For " smaller pens, as of crow " quills," a metal tapering tube is put upon the lower end of the barrel, and the pen is slipped over the tube. The pen may be made double, so as to hold different coloured inks, by means of a " metal uniting piece, with two stems to it," which " fit into two " short tubes affixed in the insides of the two barrels," or screws may be " made in and upon those parts, so as to screw them " together."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 1, p. 272.]

A.D. 1820, January 25.—N° 4435. (* *)

MOODY, JOHN.—" An inkstand containing carbonaceous and " extractive matter in a dry state, which, with the addition of " water only, will supply ink."

Within an outer casing of metal is "introduced a small vessell, "which may be made of lead, earthenware, or glass, with a hole "to admit a pin, in which the composition is placed, and the "whole of the interior is filled up with a cement," composed of lampblack and melted sulphur. The composition is made of honey, eggs, strong extract of galls, gum arabic, sugar candy, indigo, strong decoction of logwood, lampblack, charcoal, and sulphate of iron. "Knead the whole well together in a marble "mortar into a stiff paste, which put into the stands, and let it "harden in the air, over which paste must be placed a small "quantity of cotton that has previously been soaked in vinegar "that has been well saturated with salt."

[Printed, 4*d*. No Drawings. London Journal (*Newton's*), vol. 1, p. 248.]

A.D. 1820, July 20.—N° 4493.

HUDSWELL, JOHN.—"An improvement upon the manufacture "of wafers," namely, "in the application of pressure to wafer "sheets in a certain state of the process of the manufacture."

"After the wafer sheet is made by the usual materials and "process, I damp the same, and then place each sheet between "two plates of smooth polished copper or other metal of polished "surface." They are then "submitted to the action of a screw "press or other suitable press, having power equal to three or "four tons weight," and allowed to remain there from three to six hours. When removed from the press, the wafer sheets are again damped, "cut into wafers and dried off ready for use."

[Printed, 4*d*. See London Journal (*Newton's*), vol. 1, p. 350.]

A.D. 1820, December 22.—N° 4522. (* *)

BRUNEL, MARC ISAMBARD.—"A pocket copying press" "for "transferring writing by means of a damped medium, without "the necessity of using wetting or drying books." The bed of the machine is of gun metal and the pressing surface of wood. The latter is backed by a steel spring plate, which is screwed to it, the ends of the plate resting on ledges, and the pressure given by two levers in combined action. Under the bottom of the press bed is a box or recess, which contains the damping apparatus, consisting of a metal cylinder wrapped round with several sheets of linen or other suitable material of the same size as the sheets of paper intended to be operated upon, and also a sponge for damping the linen. The original writing is put into a transferring

book, and a blank leaf laid upon it. A sheet of the damped linen is then laid upon the blank leaf, and upon this a sheet of oiled paper. The book is then placed under the pressing surface, and the pressure given to the upper lever by hand.

[Printed, 6*d*. Drawings. London Journal (*Newton's*), vol. 2, p. 248.]

A.D. 1821, March 3.—N° 4540.

COOPER, ROBERT BURTON.—"Certain improvements on, or a "substitute for stoppers, covers, or lids," for various articles, among which are inkholders. The lid is made of "three "parallel plates which slide round upon a common center pin or "pivot, the upper and lower plates being so connected by means of "squares upon the center pins as to move together while the middle "plate remains stationary." Through these three plates corresponding and coinciding apertures are made for the purpose "of "gaining access to the interior of the bottle or other vessel, which "access becomes closed, and the interior of the vessel secured air "and water-tight by the two moveable plates sliding round hori-"zontally." This horizontal motion is produced by means of two knobs on the top plate, from the under side of which a small pin projects and works in a groove on the upper side of the middle plate "by way of stop." The under side of the middle plate "has "a groove all round, with a female screw in its rim for the purpose "of attaching the middle plate to a rim with a male screw on the "neck of the bottle." The under plate has "both sides alike "coated with tin or lead to prevent corrosion." "The surfaces "of the three plates which come in contact are ground or other-"wise made flat," so as to produce an air-tight stopper. The patentee claims the right of slightly deviating from "this precise "form or construction," so long as he adheres to the principle of his invention.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 2, p. 338; Register of Arts and Sciences, vol. 1 (*new series*), p. 247.]

A.D. 1822, December 20.—N° 4742.

HAWKINS, JOHN ISAAC, and MORDON, SAMPSON.—"Im-"provements on pencil holders or port crayons, and on pens, for "the purpose of facilitating writing and drawing by rendering "the frequent cutting or mending of the points or nibs unneces-"sary." The pencil holder is composed of the following parts :—

1. the nozzle, "into which the pencil or crayon is fitted so tight "as not to fall out by its own weight, but loose enough to be "easily protruded," and on one end of which are a male screw and two milled rims; 2. the nut piece, having a female screw at each end, the one to receive the screw of the nozzle, the other that of the driver; near the nozzle end of the nut piece are two milled rims; 3. the driver, "made of steel, one end of which is cylin- "drical, fitting into and nearly filling up the nozzle;" its middle part is formed into a screw to work in the nut piece, the screw being somewhat longer than the cylindrical part; the other end "is made semi-cylindrical, of about the same length as the screw, "with a small part at the end quite cylindrical;" 4. a short brass tube, the outer diameter of which is the same as that of the nut piece, "put upon the semi-cylindrical part of the driver, and "having a steel pin through one side to prevent the tube turning "round upon the driver, but to allow it to slide the whole length "of the semi-cylindrical part;" 5. a long brass tube, fitting upon the nut piece and short tube, and having a pin to work in a circular groove of the nut piece and allow "the tube to be "turned upon the nut piece without coming off, and also a pin "going through its side and through the side of the short tube, "so that when the long tube is turned round it shall carry the short "tube around with it;" 6. a groove, around near the middle of the nut piece, "to receive a lapping of silk or other elastic sub- "stance," for the purpose of preventing the long tube from turning too easily; 7. an outer case of metal or other substance fastened upon the long tube "to form an ornamental handle to "the pencil holder." To make the driver draw the pencil in, a female screw is cut in the end of it, and the pencil is screwed thereto, or "for a short distance" the driver is formed hollow, and longitudinal slits are cut in the sides, to allow the insertion of the end of the pencil. Several nozzles of different dimensions may be made to fix into the same handle by altering the shape of the driver below the screw, so that there may be put on it a separate cylindrical piece fitting each of the nozzles respectively. If "the "varying in length of the handle is no objection," the nozzle is united with the nut piece, the driver is made "with a short cylin- "der at the end of the screw," and the outer tube fits "tightly "on, and is pinned to the larger end of the driver," and slides freely over the nut piece, projecting far enough beyond the end of the driver to form a socket for a handle of wood, ivory, or other

substance. Again, the male screw may be made "outside of the "tube, which corresponds to the nut piece and the female screw "within the outer tube," and the driver "an equal sized cylinder "throughout its length, except a short part at the handle end "larger to fix it in the outer tube." "This arrangement is "adopted, and the diameters of the tubes increased to make "room for a reserve of six pencils or crayons" at the upper end of the pencil case. A case "for holding pencils or crayons nearly "as long as itself," consists of a tube having a slot nearly the whole length, with the outside cut into a screw, and a cap or seal screwed on the upper end; the driver is a short cylinder, having a stud sliding in and projecting through the slot; a milled nut, "turning upon the screw of the tube and pressing against the "stud," forces out the pencil or crayon. The improvements on pens consist, first, in making the pens of tortoiseshell or horn, and in impressing into the nibs or wearing parts, "when they "are softened with water at nearly the boiling heat, small particles "of diamond, ruby, or other very hard substances;" secondly, "in affixing to the wearing parts of tortoiseshell pens" larger pieces of the above substances, and securing the same by soldering or cementing pieces of tortiseshell over them; thirdly, "in "lapping a small piece of thin sheet gold over the end of a piece "of tortoiseshell" and pressing the gold into it, while it is in a soft state, "and afterwards forming the pen by cutting away the "superfluous gold and tortoiseshell together;" fourthly, in applying to the "nibs of pens, whether made of tortoiseshell, horn, "or quills, small particles of diamond, ruby, &c.," and causing the same to adhere by means of any varnish or cement that is not corrodible by ink; and fifthly, in placing against the back of the pen "two springs, or a forked spring of tortoiseshell, horn, quill, "or metal" to be slided to and from the nibs by a knob. "In "the case of portable or fragment pens" the forked spring may be fixed to the back of the holder, or made "a mere prolongation "of the back or upper jaw" thereof.

[Printed, 8*d*. Drawing. See Repertory of Arts, vol. 2 (*third series*), p. 219; London Journal (*Newton's*), vol. 7, p. 117; Mechanics' Magazine, vol. 33, p. 519; Register of Arts and Sciences, vol. 1, p. 166; Engineers' and Mechanics' Encyclopædia, vol. 2, pp. 277 and 284.]

A.D. 1825, February 26.—N° 5105.

EDWARDS, DAVID.—"An inkstand which is so constructed "that by means of pressure the ink is caused to flow for use."

A glass or porcelain cylinder is encircled by one of metal or other suitable material, and made fast thereto by plaster of Paris, or any other thin adhesive composition. Into a hole cut near the bottom of both cylinders is let in a tube, to which is screwed a cup with its lower end open. The outer case is covered by a cap which screws on to the upper part; to the cap is fastened a box, within which is a sliding tube with a hollow screw at its upper end; a central shaft with a screw thread cut round it, and attached to a top piece "by its square head entering a "square aperture" in it and made fast thereto by a nut, works in the hollow screw. Some loose horsehair and wool is put into the glass cylinder to absorb the ink poured in, and upon it is placed a disc of glass with "its periphery exactly fitting the "interior." "The top piece being turned, the shaft drives the "sliding tube, which, by pressing upon the top of the glass disc, "forces it down, and thereby compresses the horse-hair and wool, "and causes the ink to be driven through the aperture up the "tube into the cup."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 10, p. 194; Engineers' and Mechanics' Encyclopædia, vol. 1, p. 746; Register of Arts and Sciences, vol. 3, p. 120.]

A.D. 1826, July 24.—N° 5392.

JOHNSTON, WILLIAM. — "Certain improvements on ink-"holders," namely, inkstands and fountain-pens. With the chamber of the inkstand, which may be made of any metal or other convenient material, and with the interior coated if necessary with a glazing or japan, a cup communicates by a tube furnished with a stop-cock and lever. A "top piece" screwing into the chamber, and having an air hole in one side, contains a rose-headed stop-cock extending its whole length, with a "small "channel" drilled upwards through its middle and turning round so as to be brought opposite to the air hole when required. Instead of a stop-cock the top piece may be furnished with a piston or plunger fitted air-tight, in which case air is admitted to the chamber "by a small passage extending a short distance up "the top piece, and then turning round." Ink flows into the cup when the stop-cock in the tube is turned, and, if necessary, the rosehead is moved round until the orifice of the small channel be opposite to the air hole, or when the top piece is unscrewed (if there be no upper stop-cock) "until the air passage opens under

" the collar." To withdraw the ink from the cup "the passages " must be opened and the vessel tilted." Again the raising or depressing of the piston will cause the ink to flow back into the chamber or force it thence into the cup. The fountain pen has a tube to hold the ink closed at the top by a plug and covered by a cap—an air hole is drilled through both plug and cap,—to the bottom is fastened a small pipe furnished with a stop-cock and lever. At the lower part of the tube is attached a penholder of the ordinary construction. The nib of the pen is supplied with ink by the finger of the writer turning the lever. "The fountain " pen may be combined with a pencil or crayon case." The cap is removed to the other end of the tube and encloses the nib; a pin or plug is fastened in the cap and passes into the pipe, thus preventing the accidental escape of the ink and keeping the pipe clear. "At the reverse end of the ink-holder" the case is extended to form a pencil holder which is composed of the following parts: " a conical point conductor," which holds the pencil; " a tube" having a slot extending its whole length; "an inner tube" having a screw formed on its exterior, and also having a slot from end to end; "a steel rod" to which the pencil is attached by a spring clip, moving up and down the inner tube, and its "turned " up end" protruding through the slot therein; and "two " collars" on the inner tube, which "advance and recede by " screwing" and "embrace the turned up end" of the rod. A small square piece on each collar "protrudes forward for the pur- " pose of passing into the slot" of the outer tube. On turning the conductor (the case being held stationary), the inner tube is carried round, and the square pieces cause the rod to move up or down.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 12, p. 246.]

A.D. 1827, July 4.—N° 5517.

POULTON, GEORGE.—"An instrument, machine, or apparatus " for writing, which I denominate a self-supplying pen," composed of a "tube or reservoir, pen, and shield," that may be attached or separated at pleasure. The "reservoir is screwed on " to the pen, in which place the ink is introduced; there is a " weight within it which presses the ink into the pen by its own " gravity when in use. The pen is made of steel, cased with " metal" to prevent any corrosion, " and is partly enclosed like a " tube with a valve within it to regulate the flow of ink. The

" shield is drawn over the pen to protect it from injury when not " in use." The several parts are made " of gold, silver, steel, or " any other fit material."

[Printed, 4*d*. No Drawing. See London Journal (*Newton's*), vol. 2 (*second series*), p. 160.]

A.D. 1828, September 25.—No. 5702.

WASON, PETER RIGBY.—" A certain improvement in the article " commonly called stick sealing wax." The invention is the " introduction of a wick," whereby the wax " is more easily kept " lighted when in use." " Take of shellac one part, of vermillion " one part and of Venice turpentine one part; reduce these sub- " stances to a mass over a slow fire, frequently stirring the ingredi- " ents. When sufficiently warm, and yet not too hot to be handled, " take from the mass a piece the size of an egg, roll it on a warm " copper plate to the size desired; then make a longitudinal " groove, in which lay a straw or any other substance that will " answer for a wick; roll the wax in the usual manner and let it " cool, previous to which, while yet warm, give any impression or " device you please by means of a mould, press, or otherwise."

[Printed, 4*d*. No Drawings. See London Journal (*Newton's*), vol. 7 (*second series*), p. 84; Register of Arts and Sciences, vol. 3 (*new series*), pp. 285 and 347; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 867.]

A.D. 1830, April 24.—N° 5933.

PERRY, JAMES.—" An improvement or improvements in or on " pens." The improvement consists in producing pens from " hard, thin, and elastic metal " with the necessary flexibility, and a " length of slitted or cleft space," scarcely exceeding that of quill pens. This object is effected, first, " by a central aperture, " space, or hole " of circular, oval, square, or other shape, formed in the pen between the nib and the shoulders, or " extending con- " siderably below the shoulders and towards the nib, in connexion " with a central slit;" secondly, by making between the nib and the shoulders " one or more lateral slits " on each side of the central slit, and " rising out of or branching from " it. The most suitable material to be employed is the very best steel " brought " to a spring temper." The pens " should be of about the same " diameter as those made from quills."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 10 (*third series*), p. 334; London Journal (*Newton's*), vol. 7 (*second series*), p. 320; Register of Arts and Sciences, vol. 5 (*new series*), p. 194; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 278.]

A.D. 1831, July 13.—N° 6136.

MORDAN, SAMPSON.—"Certain improvements in writing and "drawing pens and penholders, and in the method of using "them."

[No Specification enrolled. Title printed.]

A.D. 1831, September 20.—N° 6163.

MORDAN, SAMPSON, and BROCKEDON, WILLIAM.—"Cer- "tain improvements in the construction of writing pens and pen- "holders, and in the methods of using them." The inventions claimed are "the oblique direction or position purposely given to "the slits of all pens, whether made of quills, metals, or other fit "and proper materials, and also the obliquity produced in the use "of common pens" of any sort, when held in an "oblique pen- "holder." The slit is made "in the direction of the usual line "or slope of the letters;" and a pen with such an oblique slit, used in a straight holder, or a common pen in an oblique holder, will be more durable, "chiefly in consequence of the equal wear "upon both the nibs." An oblique pen may be made of a flat piece of steel or other material, with "cheeks" "forming an "exterior addition to the surface of the pen to hold a greater "quantity of ink," or it may have a "convex or arched upper "surface for the purpose of obtaining a greater degree of stiffness "in the parts requiring it." The straight holder differs from the ordinary ones "in the shells, between which the pen is held, being "placed sufficiently on one side to bring the point of our obliquely "nibbed pen in a central line with the handle." The oblique holder is made in three different ways; first, with "two elastic or "springing metal limbs united at one end to a metal socket." The front ends or jaws of these limbs are curved, and the pen is held firmly in them "by sliding the double button, which moves "in a slit made in both limbs, near to the said front ends or jaws, "so as to close them." To hold a common quill pen with its barrel and stem entire, or the common metal pen, in an oblique position, one of the limbs is "curved in a contrary direction" to the other. Secondly, with a solid metal stem at one end of the socket, and "a moveable limb turning upon a hinge or joint at its "external end, both parts being properly curved," and the move- able limb being kept in its "closed position by sliding a metal "ring or ferril over its end." To adjust the best oblique position

of the pen, the stem "may be provided with a joint furnished "with a tightening screw." To hold the common entire quill pens, the moveable limb is curved in a contrary direction to the other. Thirdly, with the tube for holding the pen fitted with "a "short tubular and tapering plug," on which is a projecting stud to prevent it from turning round; the stem of the plug, cut with a male screw, passes through a hole in the top of the tube, and the pen being inserted between the tube and plug is held firm by screwing "a button with a milled border" on to the screw. "To "allow more motion endways to the adjustment of the pen in the "penholder," the tube may be made separate, and "be received "into an oblique springing socket or clip with a handle affixed "to it."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 13 (*third series*), p. 72; London Journal (*Newton's*), vol. 1 (*conjoined series*), p. 77; Mechanics' Magazine, vol. 17, p. 138, also vol. 28, p. 135; Register of Arts and Sciences, vol. 6 (*new series*), p. 295; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 279.]

A.D. 1831, September 27.—N° 6169.

GILLOTT, JOSEPH.—"An improvement in the making or "manufacturing of metallic pens," which "consists in forming "on the nibs of metallic pens elongated points by straight "parallel pieces, instead of sloping the points of the nibs," as is usually done. The two sides of the elongated points are made "in parallel lines, or the metal of an equal width from the "extreme ends of the points to the shoulder;" by this means the original fineness of nib is retained until it is worn down to the shoulder. The same effect may be produced without any shoulder, by making the parallel pieces merge "at the upper ends "into the nib of the pen in the usual slope."

[Printed, 4*d*. Woodcuts. See London Journal (*Newton's*), vol. 1 (*conjoined series*), p. 211; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 278; Register of Arts and Sciences, vol. 7 (*new series*), p. 5.]

A.D. 1831, October 14.—N° 6182.

SMITH, JOHN, and DOLIER, WILLIAM.—"A durable copy book, "or writing tablet, and improved delible ink, to be used there-"with." The leaves or tablets of the copybook are of stout white linen cloth, which has been stretched upon a frame, cleared of all "knots and loops that may be in it," sized twice with a "mixture of size, whiting, and linseed oil," coloured or coated

three times with a compound of the best white lead, fine Paris white, sugar of lead and linseed oil, and lastly with a preparation of white lead and turpentine, in order to obtain a proper dead surface, and "remove the greasiness and slime of the former "colourings or coatings." The ink, if black, is composed of gum arabic, lamp black, and water; if any other colour is required, "any of the well-known colouring materials used in making "water colours," must be substituted for the lamp black. To erase the ink from the tablet, wash the surface with a sponge and water, and dry it with a soft towel; if the surface appears greasy, "apply a little whiting in the washing, or in obstinate cases "sponge it gently over with a little spirits of turpentine."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 13 (*third series*), p. 332; London Journal (*Newton's*), vol. 1 (*conjoined series*), p. 419; Register of Arts and Sciences, vol. 7 (*new series*), p. 109.]

A.D. 1832, January 28.—N° 6215.

PERRY, JAMES.—"An improvement or improvements in or on pens." The invention consists in a new arrangement "of cuts and "open spaces formed so near to the slit of the pen, and in such "directions as regards the said slit, as to cause a greater flexibility "in the nibs of metal pens," all such cuts and open spaces being "formed at the sides of the central parts of the pen, and open-"ing out at the sides of the said central part, above, at, or below "its shoulders, and either wholly or in part in a direction inclin-"ing from the sides of the pen towards the said central part," and sufficiently near it to obtain an increased flexibility in the nib.

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 14 (*third series*), p. 143; London Journal (*Newton's*), vol. 1 (*conjoined series*), p. 406; Register of Arts and Sciences, vol. 7 (*new series*), p. 229; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 278; Webster's Reports, vol. 1, pp. 250, 269; Webster's Patent Law, p. 110 (also p. 138, case 134); Carpmael's Reports on Patent Cases, vol. 2, p. 403; Meeson's and Welsby's Reports, vol. 2, p. 471; Billing on Patents, p. 184.]

A.D. 1832, July 26.—N° 6288.

PARKER, JOHN JACOB.—"Certain improvement or improve-"ments in fountain pens." The patentee claims the invention of, first, the using two or more threaded left-handed screws for working the piston in fountain pens; secondly, "the particular "combination of the various parts"; and thirdly, "the lining of "*the ink*-cylinder with glass or gold." The pen is composed of

1, an outer case or handle; 2, a cap (inside which is fixed a pin or projecting wire to act as a plug to the "ink-way") serving to protect the nibs, and to elongate the handle when the pen is in use; 3, a piston, on the rod of which (flat on two sides) a screw is cut, and a three-threaded left-handed one is preferred "to obtain "a more easy motion" for the piston, and to enable the writer to supply himself with ink more readily; 4, an ink-cylinder, in which the piston works, and near the upper end of which is soldered "a small circular plate" with a "rectangular perforation" in it; the piston rod passes through this plate, and is thereby prevented from turning. Above the plate is a ring, on which a tube having "an outward flanch" at its lower end rests and turns freely; within the flanched end a few threads of a female screw are cut. This tube is kept to its place by a short tube, which slides over it and is "soldered into the upper part of the ink-cylinder. The "top and part" of the outer case is a tube closed at the upper end, in which is a hole for the pin when the cap is put thereon. The outer case and flanched tube are joined by a pin that both may be turned by the same motion. To the lower end of the cylinder is soldered the pen-holder, consisting of two tubes, the inner having a small hole drilled through it, "opened and made bell-mouthed" that the ink "may have an "inclination to fall immediately on to the nibs." To fill the cylinder dip the end of the pen-holder into ink and raise the piston by turning the outer case.

[Printed, 8*d*. Drawing. See Repertory of Arts, vol. 4 (*third series*), p. 137; London Journal (*Newton's*), vol. 1 (*conjoined series*), p. 229; Mechanics' Magazine, vol. 17, p. 251; Practical Mechanics' Journal, vol. 4, p. 157; Register of Arts and Sciences, vol. 7 (*new series*), p. 257.]

A.D. 1832, October 11.—N° 6320.

WOODS, WILLIAM, the elder.—"A certain improvement or "improvements in the construction of metal pens." The patentee claims for his pens a "superiority of action," which is obtained "by means of ribbed indentations, furrows, grooves, cavities, or "channels forming a succession or series of thinner parts than "the general substance of the steel or other metal, and each of "which said thinned parts yields in its turn accordingly as the "pen is more or less pressed upon in writing with it." The pens "may be formed not only with short slits, but of different thick-"nesses of steel or other proper metal, by varying the depths and

" numbers of the indentations or grooves accordingly, and thereby " producing a power of expansion and contraction " to any extent; and " the grooves or indentations can be made of different lengths " and depths, and of varied widths, and more or less numerously " on all parts of the pens," and they may be made " in rectilinear, " curvilinear, or oblique directions on all parts of the outside of " the pen, from its top to the extremities of its nibs or point, " and either above or below the shoulders at any convenient " distance from each other, all round or across the pen, and the " grooves or depressions may also cross each other obliquely, " horizontally, or transversely," or be made so as to form circles, squares, rectangles, or any other figure. The pens may be " of a " rounded form or with flat sides, that is to say, either curved or " rounding on their outsides over their slits, or with a flat side on " each side of the centre slit, and forming an obtuse angle on the " back, extending the whole length of the slit."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 15 (*third series*), p. 19; London Journal (*Newton's*), vol. 10 (*conjoined series*), p. 331.]

A.D. 1833, October 12.—N° 6485. (* *)

COOPER, ROBERT BURTON, and ECKSTEIN, GEORGE FREDERICK.—" An instrument or apparatus for pointing pencils, " and certain other purposes." This invention " consists in com- " bining or forming an instrument or apparatus by setting two " files, or other sufficiently hard and rough surfaces, at an angle " to each other, and thus leaving a longitudinal, concave, angular " space between them, which instrument or apparatus, so formed, " may be constructed separately, or may be attached to other " instruments, according to the purpose to which it is to be " applied." In pointing a black lead or other pencil by this instrument, the pencil is placed in the groove in an inclined position, and rubbed backwards and forwards with a certain amount of pressure, " continuing to turn it round in order that " all parts may be equally reduced by the files." This instrument may be used for pointing penholders and " the stilletoes of " ladies' workboxes," also for producing a " concave " [convex?] end to metal pipes, preparatory to soldering them.

A slate is shown having the above-described instrument let into the frame. The back of a knife, in another instance, forms the angular and rough surfaces. In another construction, the

angle suited to the purpose is formed between two cylindrical files mounted on parallel axes.

Instead of two files, one bent piece of metal may be used.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 32.]

A.D. 1833, November 19.—N° 6512

PERRY, STEPHEN, MASSEY, EDWARD (senior), and GAUCI, PAUL JOSEPH.—"Certain improvements in pens and penholders." The improvements in pens consist, first, in the application of an auxiliary spring ("a thread ring or loop of india-rubber or "caoutchouc, held in its place by means of notches cut in the "sides of the pens," or "a mere band of india-rubber drawn "gently round the pen") for the purpose of "forcing the points "of the nib together quickly and tightly, after making a down "stroke;" secondly, in applying to the pens an "ink retainer," which may be of three kinds; either a thin piece of metal with a small airhole near the top, and wide enough to touch the sides of the pen when rivetted to it; or a piece of metal "fixed to the back "of the pen and turning up a little way in front; this piece "should be about as wide as the pen at its middle part, and taper-"ing gradually downwards so as not to interfere too much with "the nib, which protrudes through an aperture made for it at the "bend of the ink retainer;" or a piece of elastic metal slipped on to the pen, and performing "the double office of an auxiliary "spring and of an ink retainer." In each the retainer is made a "little concave" towards the pen. The improvement in penholders is, either in attaching to an ordinary holder an ink retainer by a ring and screw (the pen is to be pushed under the ring, and the retainer "should not fit close to the sides of the nib"), or in making the holder hollow; inside is a rod with a valve at its lower end, and at its upper end a screw, by means of which it is raised or lowered. The upper part of the rod "must work up and down "in stuffing of some sort, so as to exclude the air." On the side of the holder is fixed "an elastic piston" consisting of "a "small conical shaped funnel," covered with a thin sheet of india-rubber perfectly air-tight, or furnished instead with an air-tight bag. To fill the holder, the lower end is immersed into ink, the valve raised, and the india-rubber pressed hard, or the bag pushed in; the removal of the pressure, or the drawing out of the bag, will cause the ink to ascend into the holder, when the

valve should again be closed. The pen is inserted between the holder and a piece soldered on to it at the lower end, and it is kept firm by a slide ring. When a supply of ink is required, the valve must be raised "as little as possible," and a gentle pressure on the india-rubber or bag will cause a supply to flow on to the pen.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 4 (*conjoined series*), p. 249; Webster's Reports, vol. 1, pp. 250, 269; Webster's Patent Law, p. 110; also p. 138, case 134; Billing on Patents, p. 115; Carpmael's Reports on Patent Cases, vol. 2, p. 203; Murphy and Hurlstone's Reports, p. 122; Merson's and Welsby's Reports, vol. 2, p. 471; New Term Reports, part 14; Law Journal (Exchequer), vol. 6 (*new series*), p. 214; Jurist, vol. 1, 443; Rolls Chapel Reports, 7th Report, p. 147.]

A.D. 1834, January 25.—N° 6549.

ARNOTT, NEIL.—"Certain improvements on metal pens and on "penholders." The invention consists in giving to pens with three or more nibs "a construction which allows the nibs, when "pressed endways, to open more or less asunder so as to increase "and diminish the breadth of the stroke in proportion to the pres-"sure;" and to penholders, "an elasticity which allows the "length of the instrument, or the distance between the nibs and "the writer's fingers, to vary considerably, according to the "pressure of the hand, without any bending being produced in "the general axis of the instrument." In the penholder "a flat, "spiral, or other spring" is fixed between the "holding part and "the stock or metallic tube," or to a plug placed in the stock, so that the spring may be within the stock when yielding to pressure. The holder is kept in its proper position by a "guide "rod or spindle," which ascends from the stock, through the spring, and through a guide plate higher up in the holder. "On the spindle beyond the guide plate is screwed a nut or collar, "by turning which the tension of the spring, and the hardness or "softness of the pen are modified." Other forms and kinds of spring may be used, and if the plug be made also a guide plate, "the spring may be placed anywhere in the tube." The "re-"quired elasticity may be made to exist in the short metallic pen "itself," without the aid of a spring holder, by bending the nibs down so as to have "nearly the direction of the stock," by making the part as far as the shoulder horizontal, and the remainder with either one or two curves. The pen with three or more nibs is used in a spring holder, having for its stock a solid piece of metal, in which legs are fixed, with their ends meeting below, "with "*flattened* surfaces, so as to form a good pen joint." A disc of

metal with grooves or holes in it through which the legs pass is fastened to the stock by "a stiff arm." The yielding of the spring allows the descent of the disc, and the consequent forcing of the legs asunder. This pen may be made by fixing a metallic plate to the bottom of "a simple stock," and by connecting the nibs or points to the plate by flat supporting springs, in such manner that the springs cross or pierce each other; pressure on the nibs will cause them to separate.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 22.]

A.D. 1834, February 27.—N° 6565. (* *)

HARDING, JAMES DUFFIELD.—"Certain improvements in "pencil, pen, and chalk cases or holders." According to one plan, the tube of a pencil or chalk holder has affixed to its lower end "a gently tapering metal cone," "made cylindrical within- "side of it. This cone is likewise slit or cleft in three or more "equidistant places longitudinally, to allow of it closing and "again springing open." A sliding ring can be slipped along the cone, and retained in any desired part of it, by means of alternate gaps made in the sides of one of the longitudinal slits, a pin being placed in the sliding ring, so as to enter one of the said gaps. Another plan consists in fixing a tapering cleft screw to the tube, a tapering, hollow, screwed ring closing the screw "more "or less as required, it springing open again of its own accord."

"Another mode of securing pencils or pens in these metal cases "or holders," is "by means of a metal screw," "which is screwed "or fitted into a hollow screw made on the metal cylindrical "tube," "and can be made to enter into the cedar pencil or "wooden penholder by screwing it into them, and thus to retain "them at any required length in use."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 10 (*conjoined series*), p. 350.]

A.D. 1834, September 20.—N° 6678.

PERRY, STEPHEN, MASSEY, EDWARD (senior), and GAUCI, PAUL JOSEPH.—"Certain improvements in pens and penholders." In pens, first, "in a new additional cut or cuts, slit or slits," which give greater elasticity to the pen (the cut enters "another cut "or an aperture just beyond the centre of the back"); secondly, in so forming the pen as to leave a spring (divided down the

middle) from which the shoulders and nibs are projected; thirdly, "in making the shank or tail of the pen elastic." The shank may be a separate piece and fastened below the shoulders; it may be "crimped" to fit a particular kind of holder, and it may have a "turn-over of the central part," admitting of a variety of shapes, to form an inkholder. In penholders, first, in attaching the pen to a stick by one or more india-rubber bands; this holder is "well adapted for the thin flat spring-tailed pen;" secondly, in making the tube at the end of the stick of "spiral wire," wound flat on one side, "one coil or turn being so closely wound upon "the other" as to allow lateral, but not longitudinal elasticity; thirdly, in joining to the tube "a flat, arched, or other spring," made with a crimped cup or receptacle for the shank of a crimped pen; lastly, in having "a screw pin and fulcrum" applicable to an elastic tailed pen. A space is cut in the holder "just to let "the substance of the pen pass through;" near the end is a metal band with a screw, which screws down on the pen and forms the fulcrum "from which both ends play." Higher up is "a guide pin or stud which passes up through a hole made in "the tail of the pen for the purpose." When the nib is pressed down, the tail will rise in proportion, and a "delightful elasticity" is obtained. Or the fulcrum may be gained equally well "by "drawing the pen up at a certain point." On the holder is fixed a spring, near the end of which is a screw passing through it, the holder, and the pen, and secured by a nut. The spring "will "always be drawing up the pen to the holder at that point where "the nut is placed."

[Printed, 8d. Drawing. See Repertory of Arts, vol. 6 (*new series*), pp. 78 and 99 for Disclaimer; London Journal (*Newton's*), vol. 6 (*conjoined series*), p. 127, and vol. 21 (*conjoined series*), p. 474, for Disclaimer); Webster's Reports, vol. 1, p. 250, for Disclaimer; Carpmael's Reports on Patent Cases, vol. 2, p. 403.]

A.D. 1834, December 23.—N° 6740.

SIMISTER, RICHARD.—"An improvement in the manufacture "of such pens as are usually made of steel or other elastic metal." The improvement is in making the pens "duplicate," that is, "in shaping the upper end of the shank" in the form of a pen; this is done "with the same action of the press as the "single-ended pens now in use." To effect this, the tools, with which the pens are cut out of thin sheets of steel or other elastic *metal*, must be made "alike pen-formed at both ends of the

" shank," and they "may be so made and the finishing adapted " as to make a fine point at one end and a broad point at the " other."

[Printed, *4d.* Woodcut. See Repertory of Arts, vol. 4 (*new series*), p. 266; London Journal (*Newton's*), vol. 6 (*conjoined series*), p. 292.]

A.D. 1835, February 9.—N° 6759.

CLEVELAND, CHARLES.—(*Partly a communication.*)—"Certain " improvements on pens, or penholders, on apparatus for supply- " ing ink to pens, and on apparatus for making of pens." The pens are made with the points of the nibs of "greater substance " of metal than usual," to prevent their "catching or per- " forating the paper;" this is effected either by making a groove in the metal plates out of which the pens are to be cut, or by reducing the substance of the plates by rollers "leaving ribs at " certain distances apart by means of a groove cut in one of the " rollers," and on punching out the pens the ends of the nibs are "formed out of the thick or ribbed parts of the plates." In tempering the pens the points of the nibs are "to be left par- " ticularly hard." The elasticity of the nibs may be regulated by a sliding band or ferrule of metal applied to the barrel. The handle of the penholder is of papier maché; to it is attached "a " shield of metal" in the form of a pen, with "any convenient " slits or openings to give more or less flexibility." Within the shield is a tube, which slides up and down by means of a thumb piece, and in which is fixed "a plug of cork or any " other suitable material"; into this are inserted "two fine rods " of metal for forming the nibs," their outer extremities passing through clips in the end of the shield. Another form of shield has a recess or indentation "suited to receive the barrel or " stem of a narrow metallic pen," which is secured by "two " clips or projecting pieces," and a sliding ferrule regulates the flexibility of the nib. The fountain penholder is composed of 1. a cylindrical ink chamber; 2. a bent tube for conducting the ink to the pen (this tube has "a socket piece and plug," which screws into the end of the ink chamber); 3. a shield, on either side of which the pen is held by clips, and which fits into the socket; (in the plug is "a small air valve having a conical " stopper," and "a small nib projects from the air valve through " the side of the socket"); 4. a piston rod, which is fastened to a knob or head, and working through a guide collar is inserted

into the chamber; and 5. a tight piston within the chamber, and occasionally connected to the rod by means of a left-handed screw at its end. The opening or closing of the air valve is effected by the taking off or putting on of a "cap piece," on one side of which is an "angular notch," which "operates as a bayonet "fastening on the nib." To fill the chamber the cap is taken off, the bent tube immersed into an ink vessel, the knob and rod so turned as to cause the screw to take fast hold of the piston, and the external pressure of the air will force the ink to follow the drawing up of the piston. By disengaging the rod from the piston and pushing the former forward into the chamber, the latter being "allowed to remain stationary at the back end," the cap may be put on, and the pen is ready for use. The improvement in pen cutters consists in making "the ordinary cutters in two separate pieces;" in forming them "with "square edges" that they may be readily sharpened; and "in so "mounting the slitting cutter" that it may be adjusted to produce any length of slit required, which is done by making it to "move longitudinally" by a finger screw or by any other convenient means. "These cutters may be attached in any con-"venient way to one of the chaps of the instrument, which opens "upon a hinge joint," the counter cutter or bed "of the ordinary "form and construction being attached to the other chap."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 18; Rolls Chapel Reports, 7th Report, p. 159.]

A.D. 1835, May 13.—N° 6831.

DUNKIN, THOMAS. — (*A communication.*)—"Certain improve-"ments in the mode, method, or system of obtaining or producing "duplicate copies of manuscripts, writings, and drawings, and in "the apparatus or machinery used in the same." A "prepared "ink" and "an impalpable powder" are required to effect the improvement in the mode of producing duplicates. The ink is made by adding to "eighteen parts in weight" of "ordinary "writing ink six and a quarter parts of sugar candy, two and a "half parts of deliquescent salt, such as marine salt, hydrochlorate "of lime, chlorine or calcerine, &c." The powder "for black "line writing or drawing" may be composed of "sulphate of "iron, or the acetate of iron, gall nut or gallic acid, sugar candy, "and lamp black, the proportions being varied according to the "intenseness of the colour or the number of duplicate copies

" wished to be obtained." " Having written a page or produced " a drawing on a sheet of paper or other material with this pre- " pared ink," " or a gummy liquid not susceptible of drying im- " mediately," place it on or under a waterproof, varnished, or " polished oiled silk or skin, or other proper surface laid on the " bed board of the press;" put on them "a double cloth or a " smooth cardboard," and pass the whole through the press between the rollers; the writing or drawing will be transferred to the surface in contact with it. Cover the transfer with the powder; sweep off " all that does not adhere to the lines;" breathe over the whole surface " until the lines appear black and are " damp," or place upon it " damped linen, stretched over a board " or on a sheet of metal with the edges turned up, and slightly " wetted with a sponge," so that the transfer may be damped without being touched; then lay a sheet of paper on it, pass both through the press, and a " first duplicate copy " is taken. Repeat the process each time " according to the number required or that " which the transfer will give." " When the transferring surface " fails in taking up sufficient ink powder to produce a perfect " impression," wash it " with a wet sponge, and it will be ready " to take another transfer."

The improvement "in the construction of the press for pro- " ducing duplicate copies on the leaves of bound books " consists " in the application of a rod supported in ears or notches in front " of the bed board of the press, which rod is to be passed through " the hollow back of the book to support it while the impression " is being taken," there being notches or recesses in the sup- porters of the rollers "to allow the rod and book to be brought " sufficiently near to the rollers to take the impression up to the " inner extremity of the leaf." The press used is "a common " double roller copying press," with the above improvement adapted to it.

[Printed, 8*d*. Drawing. See London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 218; Rolls Chapel Reports, 7th Report, p. 163.]

A.D. 1835, August 17.—N° 6886. (* *)

BANKS, WILLIAM.—Improvements "in machinery, pens, and " presses for ruling and pressing paper." The apparatus referred to consists of a machine for ruling on paper any desired number of lines at one time. The sheet of paper is caused to pass between rollers, which may be heated if desired, and over a travelling

horizontal sheet of cloth. Under the sheet of cloth, and bearing up against it, is placed a roller, which affords the hard surface for the pens to act against. The pens are placed on a spindle across the paper, at regulated distances, and their points may be lowered to the paper by means of a lever handle. The pen used consists of a box to hold the ink, and a slit point projecting to rule with; between the ink box and spindle to which it is attached are springs which allow the pen to rise and fall perpendicularly.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 16 (*conjoined series*), p. 89; Rolls Chapel Reports, 7th Report, p. 161.]

A.D. 1836, March 8.—N° 7026.

LAWRENCE, GEORGE.—A certain improvement in the screws used in fastening the mouths of mounted inkstands, as well as of bottles and jars. The invention claimed is that of an improved construction of the screw fastenings, that is, in placing the screws which tighten the cover, together with the cover itself, in a separate frame attached to the mounting "by a hinge and a simple "catch fastening or otherwise."

On the top of the inkstand is the mounting, having a hinge at one end, and at the other a catch fastened to it by a pin and hinge joint; a screw frame with a female screw round its inside, and having at one end "projecting ears or pieces," is attached at the other end by the hinge to the mounting. The screw frame is surmounted by the top, which has a male screw on the outside. When the cover is put down, "the catch is to be passed over and "between the projecting ears," and the screw, which "from being "of a large diameter" requires "to be turned on by a part of a "revolution," acting on the frame, the "curved or inclined "shape" of the ears causes the catch "to turn inwards a little" and securely fastens it. "As the male screw does not require at "any time to be removed from out the female screw," a small pin or stud placed in either the frame or male screw will prevent its being turned round more than is necessary. "The male screw "may be formed on the outside of the screw frame and the female "screw within the top," and the screw frame may be connected to the mounting by "simple hook or catch fastenings," or "springs which will yield to the screw frame as the cover is "pressed down."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 229; Rolls Chapel Reports, 7th Report, p. 167.]

A.D. 1836, April 23.—N° 7071.

MORDAN, SAMPSON.—"An improvement in making or manu-
" facturing triple-pointed pens." The patentee claims the inven-
tion of manufacturing the triple-pointed pen from one piece of
steel, metal, or quill in manner following:—With " a pair of tools
" technically called a male and female tool," fixed in a press, two
" longitudinal cuts converging towards a point " are made in an
ordinary blank, and a " short transverse cut " across it; the part
included between the three cuts, which is called the tongue, " is
" raised up at an angle from the body of the blank near the
" point, but remains attached to the blank." The two nibs and
the shaft of the pen are made in the usual manner. The tongue
is then turned over towards " the nib until its point lies upon the
" two ordinary points of the pen, and all the three points are
" held together by a piece of fine binding wire wrapped round
" them." The pen thus bound is subjected to the usual harden-
ing and tempering process, after which the wire is removed, and
the slit between the two ribs is broken; and thus the pen is com-
pletely formed and ready for finishing by the customary methods.
The curve of the third nib " is so adjusted that the space betwixt
" the three nibs shall hold a considerable quantity of ink," so as
to constitute a " semi-fountain pen." To make a triple-pointed
quill pen, a tongue is cut " out of the corresponding part of the
" quill," as before described, and bent towards the nib " over a
" mould or templet of the requisite dimensions and curvature for
" the point to lie on the points of two nibs made in the ordi-
" nary manner; the three points are then tied or otherwise held
" together while sufficient heat is given to the tongue to cause it
" to retain its new figure and position when cold."

[Printed, 6d. Drawing. See Mechanics' Magazine, vol. 25, pp. 111, 153, 230; Engineers' and Mechanics' Encyclopædia, vol. 2, p. 279.]

A.D. 1837, March 13.—N° 7321.

WINDLE, HENRY CHRISTOPHER, GILLOTT, JOSEPH, an
MORRIS, STEPHEN.—"Improved means of giving elasticity,
" freedom of action, and durability to certain parts of pens or
" instruments used in writing, as also of obtaining a supply and
" flow of ink to the same." The elasticity is given by " certain
" adjustable elastic plates " of thin elastic metal, applied by
means of a ferrule or ring " to that part of the pen or instrument

" for writing which is held by the fingers and thumb, whereby " the most rigid penholder or handle part of a pen becomes elastic " to the touch." The durability is increased either by "stamping " that part of the blank out of which it is intended to form the " nibs of the pen in such manner as to leave a thick point to " each nib and a thick ridge up each side of the slit, but pre- " serving the thinness and elasticity of every other part of the " nibs," or by "forming an arch in each nib of the pen," an " arch proper" in the left nib, and an "inverted" one in the right. By these arched or "compensating" nibs is avoided "the " inclination which most persons give to the hand in writing, " and which soon wears the right nib to a point." The supply of ink is obtained by means of a "new channel pen feeder" (a thin, oval, grooved plate and stem) made separate from the pen and attached to it by a slide ring. "The nibs lie just over and " project beyond the front edge of the feeder, which has a small " notch or space cut out to receive them." The pen with its feeder being dipped into ink, "the circular channel of the feeder " becomes filled," and as the nibs move, "they keep continually " drawing the ink down towards the points of the pen."

[Printed, 8*d*. Drawing.]

A.D. 1837, March 28.—N° 7333.

STEPHENS, HENRY.—"Certain improvements in inkstands or " inkholders, and in pens for writing." The inkholder is of that description commonly called a fountain inkstand, and the invention consists in an improved stopper of the "spigot and faucet" kind, which has a peculiarly formed opening made "through " the plug, faucet, or cone, for the purpose of allowing free access " for the pen to the fluid." The opening "to the interior of " the inkholder is formed at one side of the plug or spigot instead " of through the middle thereof." The spigot, "made of glass, " earthenware, or any other suitable material," may be placed horizontally, vertically, or at any angle, provided that the aperture in the inkholder to admit the spigot and the pen correspond thereto. The pens are manufactured by the following improved process:—The materials of quill, horn, or other animal substance of the requisite thickness, in as dry a state as they can be procured, are cut into the proper forms by means of a cutting punch *or other instrument*. "A pair of dies shaped according to the

" model or required curved or bent form of the pens intended to " be made " are then heated to a degree sufficient to harden the materials without destroying their texture; the cut pieces are placed between them, subjected to pressure, and not removed until the dies are quite cold, when they " will have become set or fixed " in the required form." That the slit may " not be allowed to " pass too high up," the pen is placed " under a cutting punch " and die," and a small hole is perforated at the place to which the slit is to extend. The " required curved or dished form " may be given first, and the cutting and shaping afterwards. The pens may " require scraping or finishing with a common penknife in " order to take off any irregularities or roughness, and also to " adjust the points," and finally they may be varnished " to pre- " vent the action of the ink " upon them.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 4 (*conjoined series*), p. 183; Rolls Chapel Reports, 7th Report, p. 185.]

A.D. 1837, April 18.—N° 7342.

STEPHENS, HENRY, and NASH, EBENEZER.—" Certain im- " provements in manufacturing colouring matter, and rendering " certain colour or colours more applicable to dyeing, staining, " and writing." The improvements are, 1. The method of " manufacturing the ferro-prussiates " (this part of the invention does not belong to the present series). 2. " Rendering Prussian " blue soluble. 3. " Combining the coloring matter of cochineal " or of lac dye with other matters, so as to produce a superior " red fluid." 4. " Combining carbon " with the solution of Prussian blue or any other colours, " so as to form a writing fluid " or ink which cannot be entirely effaced by chemical agents." The Prussian blue is put into an earthen vessel and covered with " a quantity of strongly concentrated acid;" if sulphuric acid is used, it should be diluted, " at the time when the mass turns " white," with water " equal to about its bulk." It is to remain in the acid " from twenty-four to forty-eight hours or longer," when the mixture is to be diluted " with a large quantity of water, " stirring it up at the time for the purpose of washing from it " the salts of iron." It is now suffered to stand " until the " colour has subsided, when the supernatant liquor is to be drawn off with a syphon and more water added; the process is to be repeated until " the acid with the iron has been completely washed away," when it is to be placed upon a filter and thoroughly

drained, and afterwards "placed in evaporating dishes and gently "dried." To form it into a solution oxalic acid is added; and, when the two are carefully mixed together, cold water is poured on "a little at a time, making it into a dense or dilute solution "according to the colour required;" "about one part of oxalic "acid will dissolve six parts of Prussian blue (the weight taken "before digesting in the acid"); for a dilute solution more acid will be required. A solution of Prussian blue thus prepared is "available for writing or forming a writing fluid or ink to be "used with steel, quill, or other pens." 3. A quantity of common soda, potash, or carbonate of ammonia is dissolved in boiling water, and at intervals is added "twice its weight of crude "argol in powder." When the effervescence has ceased, the solution is poured off or filtered, and to it is to be added "by "measure half the quantity of oxalate of alumina or oxala-phos-"phate of alumina," prepared "by adding to precipitated "alumina or phosphate of alumina in a damp state as much "oxalic acid as will dissolve it. Into this mixture when cold is put as much cochineal bruised or powdered as will give it a fine red colour, and, after standing forty-eight hours, it is strained off for use. "Carbonated alkali, or the potash or soda of commerce, "or ammonia" (or some of the other alkaline salts) is mixed "with a resinous matter, such as shellac or resin, about equal "parts by weight of each;" the mixture is boiled in water (the quantity being according to the required strength of the solution) "until the resinous matter or a great portion of it has become "dissolved." The necessary quantity of fine lampblack is mixed in a mortar with this solution, and thereby is produced a black liquid, which "may then be mixed with the Prussian blue "solution, or other suitable coloured solutions, to form an in-"delible ink."

The title of the above Specification originally stood thus, "Certain improvements in manufacturing colouring matter, and "rendering certain colour or colours applicable to dyeing, stain-"ing, and writing," and by Memorandum of Alteration, dated September 22nd, 1837, the word "more" was inserted between "colours applicable."

[Specification printed, 6*d*. Drawing. Memorandum of Alteration printed, 4*d*. See Repertory of Arts, vol. 11 (*new series*), p. 50; also p. 58 for Memorandum of Alteration; London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 207; also vol. 21 (*conjoined series*), p. 476, for Memorandum of Alteration; Rolls Chapel Reports, 7th Report, pp. 184, 185.]

A.D. 1837, November 14.—N° 7474.

WHITFIELD, ROBERT.—"A composition which I denominate "an indelible, safety, and durable black fluid writing ink." Certain proportions of linseed oil, cocoa-nut oil, solution of india-rubber, molasses or treacle, loaf sugar, parchment shavings, powdered seed lac, ground linseed, ground ochre seed, ground cotton seed, Venice turpentine, very fine pulverized charcoal, ivory black, Antwerp black, dried bullocks' blood, finely powdered burnt horns, tartar, Indian borax, cyanuret of potash, Aleppo galls finely powdered, powdered pomegranate peel, finely powdered gum kind, anacardian nuts, powdered glue, finely powdered walnut skins, and finely powdered gum arabic, are "to be mixed in a large "iron boiler, and then made to boil, at which time the mixture is "to be set on fire with a red hot bar of iron, and the smoke arising "therefrom is to be received into a large inverted cone made of the "best sheet iron. As soon as the whole of the oil is consumed "the carbon that adheres to the inside of the cone is to be "collected and put into jars. The residue in the iron pot is to "be taken out, and rubbed down to a very fine powder on a "stone slab." To compound the ink, add to some of both carbons French vinegar, hot water, gum arabic, and gum lac; boil for ten minutes in an iron pot; then put in finely powdered Aleppo galls and logwood chips; "stir the whole well together "until cold, and put the liquor into large flat pans, and expose it "to the atmosphere for three weeks." The patentee claims the invention of "submitting a compound of the above ingredients, "or the larger part or portion of such ingredients, to the process "of burning, and obtaining two products," and of using the same "in combination with the last-mentioned materials, or the "larger portion thereof."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 10 (*new series*), p. 41; London Journal (*Newton's*), vol. 12 (*conjoined series*), p. 146.]

A.D. 1838, January 11.—N° 7535.

EDWARDS, JOHN.—"Certain improvements in instruments "used in writing." The patentee claims the invention of "a "certain addition or appendage to pens for the better supplying "thereof with ink;" of "certain fountain penholders in which "the flow of ink into the pen may be regulated by a conical plug "or plugs;" and of "an inkstand or inkholder for supplying on

" charging certain of the penholders." "A spiral coil of wire," " which serves as an inkholder, is inserted " into the tube of the " pen, extending down to the shoulder," and fixed " by any con- " venient means of attachment," or inserted above the shoulder, " the sides of the pen embracing and holding the coil of wire by " forming somewhat more than a half circle." The coil is made either of round wire, or of " wire which has been rolled flat, and " then annealed and turned into a coil edgeways, the coil com- " pressed, and then each ring of the coil drawn a little asunder." The penholder is formed of two cylinders (with an air-hole in each), the upper sliding in the lower or ink reservoir; the lower part of the upper one is packed so as to form an air-tight piston. To the interior of the lower end of the reservoir is soldered a tube *a* (having a shoulder at the top) which is tapped on the outside with a screw thread; at the bottom of *a* is soldered a conical plug, so formed as to allow the ink to flow from the reservoir past its sides, and fitting into the top of a tube *b*, and by its moving up and down increasing or stopping the flow. On the top of *b* is soldered a tube *c*, on the inside of which is a screw thread corresponding to that on the outside of *a*, and round the upper end is "a collet or ring." Round the lower end of the reservoir is soldered or screwed a collar, overlapping the collet, and (together with the shoulder of *a*) confining its ascent and descent; thus by turning the reservoir and *c*, the plug is raised or lowered. The air-hole in the reservoir " is covered by a collar on the outside, " packed with leather, cork, or other suitable material " to render it air-tight, and "the range and action of this collar is kept " within its proper limits by rims attached to the outside " of the reservoir. To prevent the upper cylinder from pressing into the reservoir, the lower end of the former and the upper end of the latter are threaded with screws, and, when the reservoir is filled by drawing up the piston, " two or three turns will fix it in that posi- " tion." "There is a collet of the depth of two or three threads " of the screw on the inside of the reservoir, to prevent the " screws being worn by the sliding up and down " of the upper cylinder. On laying the penholder down, the air-hole should be kept upwards, and to insure this position " a flat piece of metal " or other material may be fastened to the contrary side." The upper cylinder and reservoir may be made in one piece; in this case the ink must be poured in "at its somewhat funnel-shaped " *top;*" and an air-hole near the upper end is " opened or closed

" by screwing up or down the head." A penholder of another construction is composed of a cylinder (with an air-hole in the upper part) forming the body; a tube *a* (in which is an air-hole) having a "bottom" and a "division," and soldered inside the upper part of the cylinder; a "somewhat similar tube" *b*, having a "top" and a "division," and soldered to the lower end; a small tube *c* fastened "along the inside of one side" of the cylinder, and having a small portion of its inner side bent out at the lower end to the outside of the cylinder and soldered thereto air-tight, as also to the divisions and ends of *a* and *b*, through which it passes. The bottom of *a* and the division of *b* have holes drilled through their centres, forming sockets, into which conical plugs upon a bent rod or wire fit exactly, the division of *a* and the bottom of *b* (which has its sides cut away to allow free passage to the ink) acting as guides to the rod, one leg of which, having the plugs upon it, passes through the centre of the cylinder, and the other down through *c*, and "comes out at a "short slot" in the side of the cylinder, where a finger knob is attached to it. The lower part of the penholder is made up of a small tube *d* "from which the ink flows immediately on to the "pen" and to which is soldered "a bit of small tubing with "a portion of one side cut away, so as just to leave "room enough for the wedge-formed tail of the pen to be "inserted." *d* is fastened to a tube *e*, which is slit up and threaded on the outside with a screw. The pen is thrust between *d* and *e*, and held fast by the spring formed by the slitting of *e*. The top of *e* is soldered into the bottom of another tube *f*, which is soldered into *b*, and has a portion cut out of its side to allow a place for the reception of *c* to which it is soldered. There is a cover to protect the point of the pen and a reserve at the top of the holder for pens. To admit ink to the pen, the knob, the action of which is limited by a "collar being screwed up or down "between the extremes of being close and at full flow," should be pushed down by the middle finger; "this will simultaneously "open the lower plug to allow the ink to pass, and the upper plug "to admit the air." The aperture through which the ink issues immediately to the pen may be made either on one side or at the end of the tube point; in the latter case the cover has a wire fixed in its centre to fit into the tube point and prevent it from being clogged with ink. The inkstand from which the last-described penholder is charged is a cylindrical vessel, having screwed on to

it a top with an air hole and a shoulder or projection on one side of it. Through the top passes a piston rod, tapped from top to bottom with a left-hand screw, and turning freely against a "collet" by means of a "head" screwed to the rod. The head has a milled edge, and should be large enough to allow a sufficient grasp for the hand, and may be made a box for wafers, &c. A piston tapped in the centre with a female screw, and packed with cork, leather, or by other suitable means, fits so tightly within the cylinder that it will move up and down but not turn in it. The cylinder is inserted into a "bottom" with a "projecting part or "shoulder," which is directly under the projection of the top, and between shoulder and cylinder is a channel for the ink. In the shoulder is drilled a socket through the bottom of which works a "tube valve;" on the top of this tube is affixed a "cup piece" containing a piece of leather or other suitable packing material; at the lower end are holes on each side, and at the bottom "a "hard soldered button piece" conically shaped so as to close the hole in the bottom of the socket when required. Round the tube is coiled "a small spiral spring," which presses between the bottom of the cup and the bottom of the socket, where should be placed a piece of cork or other material for the purpose of packing. To fill the cylinder the top, piston, and rod are removed, and when replaced care must be taken that the upper shoulder is directly over the lower. To charge the penholder, insert the point into the hole in the centre of the packing of the cup, press it down, and place the head under the upper shoulder. The pressure on the cup causes the tube to descend and the holes to be in the channel. Turn the milled head from right to left, and the ink will be forced out of the cylinder, through the holes, up the tube, and into the penholder. At the extreme point of the lower projection is a small cup or socket, in which the point of the pen may be placed when not in use, its top leaning against the upper shoulder, which should be made with a hollow to hold it.

[Printed, 8*d*. Drawing.]

A.D. 1839, February 2.—N° 7959.

DAFT, THOMAS BARNABAS.—"Certain improvements in ink-"stands and in materials and apparatus for fastening and sealing "letters or other documents." The patentee lays claim to improvements in inkstands; in the mode of "displacing" the ink

therein by means of the pressure of air forced into the upper part of the ink reservoir; in the application of the inkholder above the level of the ink in the reservoir; and in the placing of a strainer or filter in the passage between the reservoir and inkholder. To the top of the reservoir a cover is affixed by cement or otherwise; to the cover is attached by screw or otherwise a short cylinder with a bottom to it. "An air-way passing from the top downwards "through the side" enters the cylinder, and inside is a piston packed air-tight, and worked by a screw "working through the "cover of the cylinder." This apparatus for forcing air into the reservoir may be either at the upper part of it or in any convenient position. The inkholder, which is above the level at which the ink can at any time stand in the reservoir, is fastened to a tube which either passes through the cover and descends to nearly the bottom of the reservoir, or is outside of it and "passes out from "the bottom thereof." The lower end of the tube is covered with "a portion of fine woven silver wire cloth or other suitable "material," which acts as a strainer. The inkholder "is affixed "to a circular plate or cap, having a screw by which it is screwed "over the opening formed in the cover" of the reservoir in an air-tight manner, and it is by removing this cap that ink is supplied to the reservoir; "or there may be a separate opening, "having an air-tight covering or cork, at which ink may be "supplied." When the tube is outside, the bottom of the cylinder opens into the reservoir, and the ink may come into contact with the piston and impede its action; this arrangement is suitable for only such inkstands as are not moved from place to place. The improved apparatus for fastening letters, &c. consists of a thin plate or band of metal and an instrument with "two cutting "edges." When the letter is folded, "two holes are made "through the several folds by the instrument," the ends of the band are passed through, "folded down, and fastened by means of "sealing wax, or other proper means."

[Printed, 8*d*. Drawing. See Repertory of Arts, vol. 12 (*new series*), p. 288; London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 32; Mechanics' Magazine, vol. 32, p. 337.]

A.D. 1839, August 1.—N° 8175.

NORMANDY, ALPHONSE RENÉ LE MIRE DE.—"Manufacture "of inks and dyes." Four improvements relate "to writing, "staining, and dyeing," and a fifth to "an indelible writing ink."

The first is a "mode of superseding the use of nutgalls :"—Sumac, elm-wood, chestnut, beach, willow, elder, oak, plum, sycamore, cherry, poplar, catechu, or any wood or berry, or extract of vegetable substances containing gallic acid and tannin or either is reduced to powder and boiled in a copper full of water until a sufficiently strong decoction is obtained. There is then added "a "certain quantity of Campeachy wood, of acetate and hydrate of "dentoxide of copper, of sulphate of alumine, and of potash of "sulphate of protoxide of iron," and "gum arabic or the best "sort of gum senegal, in the proportion of 80 lbs., or thereabouts, "for 340 gallons of liquid, also a variable quantity of sulphate of "indigo." The quantities of Campeachy wood, &c. vary according to the vegetable substance first employed, the shade of colour (from the dark blue to the most intense black) intended to be produced, and the fancy of the operator; one proposed table of proportions is given. The second consists in a method of treating Campeachy wood "for the purpose of obtaining a fluid "of that dahlia colour called king of purples :" — Campeachy wood chips, in the proportion of 12 lbs. "to 12 gallons of water," are boiled until a strong solution is produced; the boiling solution is poured through a sieve upon 1 lb. "of acetate and hydrate "of dentoxide of copper previously pulverized ;" there are added, "almost immediately, 14 lbs. of sulphate acid of alumine and "potash, or thereabouts," and gum in the same proportions as for the black. After a few days a beautiful dahlia colour is produced. The third is a "process of operating upon Chinese blue so as to "produce a blue fluid :"—Chinese blue is ground "in water with "oxalate acid or bioxalate of potash," adding also a quantity of gum ; the proportions for 7 ounces of water should be, Chinese blue 3 drachms, exalate 1 drachm, and gum 1 drachm. "There "is advantage in saturating the Chinese blue with solution of tin "previous to mixing it with the water and the other ingredients;" 1 drachm of the solution is poured upon the 3 drachms, "stirring "it, adding at the same time a little water ;" the oxalate is then joined and at the same time the remainder of the water and the gum. The fourth refers "to the production of a solid, semi-solid, and "soluble ink," applicable also to staining and dyeing :—A thick paste is made by pouring a strong decoction of Campeachy wood, (stirring during the process) upon 3 drachms of catechu, 1 drachm of extract of hæmatoxylon, 10 grains of acetate and hydrate of *dentoxide of copper*, 1 scruple of sulphate of alumine and potash,

1 drachm of gum arabic, 1 drachm of sulphate of protoxide of iron, and a variable quantity of sulphate of indigo evaporated to dryness, "the whole of these ingredients being previously reduced " to a fine powder." The paste, when dry, is cut into "figures " of variable sizes," and, when dissolved in water, "will form a " very good black or purple or blue-black fluid, according to the " quantity of sulphate of indigo employed." A semi-solid is obtained by adding to the above "from half a drachm to one " drachm of uncrystallisable sugar or molasses." The fifth consists in "combining carbon with other colours and acids:"—24 lbs. of carbon (Frankfort lampblack by preference) is ground " with a mucilage of gum and water," 20 lbs. of gum for 60 gallons of water; the mixture is filtered through a coarse flannel or a funnel whose spout is stopped with sponge, and thereto are added 4 lbs. of oxalic acid and a variable quantity of decoction of cochineal and of sulphate of indigo.

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 12 (*new series*), p. 237; London Journal (*Newton's*), vol. 16 (*conjoined series*), p. 138; Inventors' Advocate, vol. 1, p. 98.]

A.D. 1839, August 26.—N° 8208.

BOGARDUS, JAMES.—"Improved means of applying labels, " stamps, or marks to letters and other such documents." The object of the invention is "to annex a stamped or engraved " label to a letter or other document by means of the seal." " The label, whether of paper or parchment, may be of any size " or shape, and if it be required to affix one to a letter by means " of a wafer, let the wafer cover a portion of the label, and the " rest of the wafer will seal the letter; the same may be done with " wax. But a better method is to cut or pierce a hole in the " label, which hole being placed where the wafer or wax is placed " to seal the letter, the act of sealing the letter affixes the label."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 13 (*new series*), p. 278; London Journal (*Newton's*), vol. 16 (*conjoined series*), p. 158; Inventors' Advocate, vol. 2, p. 180.]

A.D. 1840, June 2.—N° 8532.

DAIN, CHRISTOPHER.—"Certain improvements in the con- " struction of vessels for containing and supplying ink and other " fluids." The patentee limits his claim of invention "to the intro- " duction of a valve or stop-cock placed between a reservoir for

" the ink or other fluid and the vessel or cistern from which it is " taken to be used." The inkstand is a reservoir of glass having a tubular neck which communicates with a small cistern or dipping cup. There are two holes, one "about midway in the neck," the other near the top of the reservoir. The inkstand is cemented on to a stand of metal or other material, and further secured thereto by a "metallic saddle piece," the arch of which holds down the neck, being fixed by screws " that pass through a plate " of a collar " and are " tapped into the stand." " From the " centre of the arch there springs an arched bracket," having at its upper extremity a circular collar bored out in the middle, through which works a screw plug, having at its lower end a piece of cork fitting the hole near the top of the reservoir. On the plug is a "cap piece, containing within it a revolving piece " square at the top. Through the hole in the neck passes a stop-cock or ink valve of cork, affixed to which is a brass plug, " square " at its lower end, and having at its upper end a six-threaded " screw," which works in a socket squared at the top. The socket is held in its place by two collars, one on each side, and the plug " is prevented from turning round by its square part " working in the square hole " of the lower collar. A funnel surmounts the upper collar, and a key fits on to both squares. To charge the reservoir, remove the funnel and apparatus on the top forming the air valve, screw the funnel to a small pipe, which is flattened on one side to allow egress to the air, and introduce the pipe into the hole. To let ink pass into the dipping cup, raise the air valve by turning the square of the plug with the key, and do the same to the cork valve of the ink plug. The ink is returned into the reservoir " by opening the valves and inclining " the inkstand."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 31; Mechanics' Magazine, vol. 33, p. 588; Inventors' Advocate, vol. 4, p. 20.]

A.D. 1840, August 1.—N° 8584.

DAFT, THOMAS BARNABAS.—" Improvements in inkstands or " inkholders." The invention relates to the mode of causing the ink to flow up out of a vessel into an inkholder above the level of the ink in the vessel, first, by " connecting the movement of the " cover of the inkholder with apparatus for raising the ink;" secondly, by applying a flexible surface; and thirdly, " by passing

" the tube or ink passage of the inkholder through the piston." The inkholder with a tube attached to it is fixed by a screw or other means into the cover of the ink vessel; to the end of the tube is affixed a strainer of finely woven wire cloth, or the orifice may be contracted, or a very small tube may be used, so that a strainer is not required. The ink vessel is filled through the opening made by unscrewing the holder. The cover of the holder is connected with an air pump, which at each upward movement of the cover forces air on to the surface of the ink, causing it to flow upwards into the holder. The air pump consists of a cylinder, with a bent tube passing from the bottom thereof to the upper part of the ink vessel; a piston, and a piston rod attached by a pin joint or otherwise to the lever handle of the cover, and " moving on a fulcrum," carried by a standard affixed to the cover of the cylinder, " there being a slit or opening through such " cover for the passage of the piston rod," and a second cover applied over the cylinder, having a slot through which the lever works. The apparatus may be varied without departing from this part of the invention, which simply relates to connecting the movement of the cover of the inkholder with the flow of the ink. The bottom of the cylinder may be covered with a flexible surface of india-rubber or other material, which may, but need not, be affixed to the lower end of the piston, and " which, being pressed " or moved out of its natural figure, will enlarge or decrease the " interior area " of the ink vessel, and thus withdraw the ink from the inkholder or cause it to rise therein. Again the tube of the inkholder may be made to pass through the piston, which should be of cork. In this case, the piston " moves in a cylin- " drical opening in the cover of the inkstand," and as it is " raised " or lowered, so will the ink be withdrawn from or rise to the " inkholder."

[Printed, 8*d.* Drawings. See London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 33; Mechanics' Magazine, vol. 34, pp. 126, 217; Inventors' Advocate, vol. 4, p. 98.]

A.D. 1840, September 17.—N° 8633. (* *)

POOLE, MOSES.—(*A communication.*)—" Improvements in pre- " paring materials to facilitate the teaching of writing." This process consists in producing copies of letters and of hair strokes, by which children are to be taught to trace, by the application of typography and with colored ink, or with one of a pale tint,

of whatever shade it may be, but capable of being passed over again with writing ink. In order to make the formation of MSS. letters, when printed, "correspond with the principles "of caligraphy," "I have employed every means of joining "letters," "giving the preference to the shape of the letter "which afforded the greatest regularity in the direction of the "different hair strokes; indeed, for every hair stroke that could "belong to a letter, I have had a type of the letter cast. The ink "suitable for printing these copies is made by dissolving in water "the most suitable vegetable or mineral colours." "A certain "quantity of this liquid is mixed with white lead until it becomes "perfectly coloured; the mixture is then dried and afterwards "made use of in the composition of ink by grinding it on a marble "slab with" as little unboiled linseed oil as possible.

[Printed, 4*d*. No Drawings. Mechanics' Magazine, vol. 34, p. 251; Inventors' Advocate, vol. 4, p. 197.]

A.D. 1840, December 16.—N° 8734.

BAYLISS, CHARLES WINTERTON.—"An improved metallic "pen, to be called the patent flexion pen, and an improved pen-"holder." In the improved pen the part from the shoulder to the point is bent upward, so that the line of the slit falls "between "the axis of the penholder and the surface of the paper written upon." The lower end of the improved penholder is bent in a similar manner, and the patentee claims the invention of such improvements, "together with any variations of construction "depending on the same principles."

[Printed, 6*d*. Drawing. See Mechanics' Magazine, vol. 34, p. 463; Inventors' Advocate, vol. 4, p. 405.]

A.D. 1840, December 31.—N° 8770.

SCOTT, HENRY.—"Improvements in the manufacture of ink or "writing fluids." The patentee claims "the application of "nitrate of iron and gas black," combined with other substances, to the manufacture of ink. He gives the following formula for making 80 gallons:—Saturate 48 lbs. of logwood chips two days in soft water, put them into a close covered iron caldron, add 80 gallons of soft water, and boil for one hour and a half. Then take out the wood, add to the fluid 48 lbs. of the best picked Aleppo galls in coarse powder, boil again for half an hour, and let it remain in the caldron twenty-four hours infusing; during this

time agitate it frequently. Draw off the clear fluid and put into it 40 lbs. of pulverized sulphate of iron; after a week (stirring daily) add 4 gallons of vinegar and a well strained mucilage made by dissolving 7½ lbs. of the best picked gum arabic in water, and a few days after 20 ounces of the concentrated nitrate of iron. When "its height of blackness" is reached, pour the clear fluid off from the sediment, and add to it the following substances, each separately prepared and ground finely :—1. half a pound of Spanish indigo made into an easily soluble paste with a portion of the fluid; 2. 5 lbs. of well washed and purified Prussian blue, but made into a soluble paste with distilled water; 3. 4 ounces of gas black ground in 1 ounce of the nitrate of iron. Let each of the three "remain a few hours unmixed, when the whole may be "incorporated with the fluid and kept agitated daily for a week; "the clear may then be poured off for use."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 16 (*new series*), p. 109; London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 26; Mechanics' Magazine, vol. 35, p. 60; Inventors' Magazine, vol. 5, p. 20.]

A.D. 1841, May 22.—N° 8964.

GALL, WILLIAM.—"Certain improvements in the construction "of inkstands." The inkstand is composed 1. of a glass ink vessel, on the top of which is a "dipping place with a very small hole" at its bottom, through which the ink rises; 2. a flexible membrane or diaphragm, which is securely fastened to the ink vessel and forms the bottom thereof; to the diaphragm is fixed, by india-rubber varnish or other cement, a circular plate with a stem, on which is a screw with so much of its worm cut away "as will "allow it to turn round freely" when the diaphragm is at the top or bottom of the ink vessel; 3. an outer case, at the top of which is a groove to receive "a circular metal rim or collar" cemented to the ink vessel, and turning freely in the groove, but secured in its place by a cap screwed on to the case. Inside the case is "a bar carried from side to side with a tapped hole in the "centre to suit the screw." If the diaphragm be a non-elastic material, a small spring at the bottom of the case presses against the lower end of the stem. The ink is poured in at the top of the vessel through a hole which is closed by a stopper of any construction. Previous to filling, the diaphragm must be depressed by turning the vessel, thereby causing the screw to act,

and a slight turn in the contrary direction will force ink up into the dipping place.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 330; Mechanics' Magazine, vol. 35, p. 414; Inventors' Advocate, vol. 5, p. 356.]

A.D. 1841, June 5.—N° 8978.

BERRY, MILES.—(*A communication.*)—"Certain improvements "in machinery or apparatus for ruling paper." "The machine "is constructed upon the principle of the ordinary cylinder "printing machine," and consists of 1. "a moveable reciprocating "platform, which carries the paper to be ruled; 2. two cylinders "covered with cloth," and above them "a carrying roller, that "draws the sheet of paper brought by the reciprocating motion, "and conveys it into the machine, where it is passed round the "cylinders, and maintained in contact with them" by cords or bands; these "by their peculiar disposition also turn the sheet "of paper after one side has been ruled, and present the contrary "side to the pens or ruling instruments;" 3. a wiping roller, covered with blotting paper, "which revolves in contact with "the lower cylinder, and absorbs any ink left thereon by the "ruled side of the paper;" 4. a number of pens or ruling instruments suitably arranged;" 5. "a convenient disposition of ink or "colour troughs;" and 6. an arrangement of tapes or threads, "which carry the ruled sheet out of the machine" and deposit it in a box. The upper cylinder has "a toothed wheel, mounted "on the axis thereof, and which gears into a similar toothed wheel "on the axis of the lower cylinder," and when the upper one is turned by a winch handle, the lower is made to revolve in an opposite direction, and motion is given to the whole machine. To the under side of the moveable platform is attached a band, cord, or strap, one end of which passes over a pulley and supports a weight, and the other end over another pulley, "and is "fastened to the periphery of a roller," "upon the axle of which "is mounted a pinion, and a traction weight and cord." "On "the axle of the upper cylinder a small sector rack is fastened." The pens for each cylinder are fastened by screw clamps or in any other convenient manner to a shaft or bar which turns on its centre, "and the time that the pens commence and continue "ruling is regulated as follows:"—To the axle of the shaft is fixed a lever, the end of which "bears against a cam" on the

axle of each cylinder; "when the rise of the cam comes into "contact with the tail of the lever," the shaft is turned partially round, and the pens are thereby withdrawn from the cylinder; when the rise of the cam has passed round, the pens are brought by the force of a spring to bear against the surface of the paper on the cylinder, and thereby rule the paper. In order to rule lines of different lengths, the rise of the cam "is made of several "sectional parts," which are fastened on by screw nuts. The ink troughs are supported by brackets, which are connected to a longitudinal bar "that extends across the machine;" on the end of this bar and outside the frame "is mounted a long lever," which is acted upon by another cam, and by such action raises the ink troughs "precisely at the time that the pens are with-"drawn from the paper." If lines of various colours be required, the troughs may be made in several divisions, or a second set of pens and troughs may be arranged below those described. The framework is of wood, and on the top of it is a platform for supporting the pile of blank paper which is to be ruled. Each sheet is placed on the moveable platform, "and its situation "thereon regulated by moveable slides." As the upper cylinder revolves, the sector rack comes in contact with the pinion, causing it to revolve and draw the moveable platform forward, and thereby introduce the edge of the sheet between the roller and upper cylinder; the cylinder continuing to rotate, the rack passes away from the pinion, which is, together with the platform, drawn back by means of the weight, "assisted by a slight inclination of the "framework," into its original position.

[Printed, 1*s.* 6*d.* Drawings. See London Journal (*Newton's*), vol. 23 (*con-joined series*), p. 407; Mechanics' Magazine, vol. 35, p. 462; Inventors' Advocate, vol. 5, p. 358.]

A.D. 1841, June 19.—N° 8992.

HAUGHTON, JOHN.—"Improvements in the method of affixing "certain labels." Three separate machines are described, one for damping, one for stamping, one for doing both, called a labeller, and an apparatus for accurately cutting postage labels. The damper, "a "solid rectangular block of wood, about five-eighths of an inch in "height, having its four vertical sides entirely cased with thin "brass," and its upper horizontal surface "very slightly larger "than a postage label," is fitted into a brass case (each side being about one-sixteenth of an inch in thickness, and half an inch in

height) without either bottom or top. Under two sides of this case are steel springs, hardened and tempered, on which the case rests, so that, when they are not pressed down, " its sides stand " about three-eighths of an inch above the level of the upper sur- " face " of the block. A thin silk bag, rendered waterproof, rests on the upper surface of the block, and its edges, placed on the top of the sides of the box, are closely pressed by a brass frame, which is fastened by pins to the top of the said sides, so that no moisture can pass between the frame and the box. The frame is one-sixteenth of an inch in thickness, and the same in height. The block is screwed to the bottom of an outer case, between which and the block the box works " vertically, nearly " air-tight." On the top side of the case is a short tube or pipe, in which works a plunger fixed by a pin into the bore of a wooden block, which has its vertical sides encased in thin brass, and which is equal in size horizontally to the lower block, but vertically to the brass box. The lower side of this upper block is covered with a flat piece of caoutchouc. Round the plunger is placed a spiral spring, with one end fastened to the upper block, and the other to the short tube. An opening is cut across two adjoining sides of the outer case, for about three-eighths of an inch above and a quarter of an inch below the frame. The stamper is made similar to the damper, except that the lower block has a piece of caoutchouc covering its upper side, that the brass box has not a frame, and that the space occupied by the bag is a receptacle for postage labels, " laid in succession with " their gummed sides upwards." The machines are thus used :— The corner of a letter being laid on the frame through the open- ing, the plunger is pressed, and the upper block descends, forcing down the letter, frame, and box, and thereby causing the letter to be damped by a moist sponge placed in the bag. The letter is then taken out and similarly placed in the stamper, where a like process causes a label to adhere to the damped corner. A sliding lid of flat brass works in a horizontal groove made in the inside of one of the sides of the outer case of each machine, thereby preventing the sponge and the labels from falling out. The labeller has all the parts of the stamper; and round the box is fitted another brass box, standing about three-eighths of an inch above the surface of the lower caoutchouc when the springs of the lower box are not depressed, and which also works " vertically " on springs placed under its two long sides; " these boxes should

work almost air-tight. In two opposite sides of the outer box is a slot, and there are corresponding ones in the case, to one side of which is affixed a bent lever, "working in a vertical plane" round a screw; on the other, an arm "similar to the long arm of "the bent lever," screwed and worked in like manner; these two arms are united by a horizontal bar, which slides along the slots, and has a sponge attached to that part of it which is within the outer box. A rod, "freely working vertically within slotted "guides" fixed to the case, is connected with the extremity of the short arm of the lever. In the case and outer box is an opening "sufficient to allow the sponge on the bar to project from the "back of the machine," for the purpose of being moistened. "The two short sides" of the outer box have attached to them "parts with vertical slots," which are connected with the aforesaid slots, and are so formed as to allow the outer box "to be "depressed without hindrance from the sponge bar," and in the case are openings, so that the parts may "move freely vertically." The sponge is protected by an external case, on the upper side of which is a lid. This case is "firmly fastened to both the "upper and lower parts of the back" of the other. A letter is inserted as in the damper; the plunger is then depressed with a finger until the upper caoutchouc lightly presses the letter, while another finger presses the rod, which moves the lever and arm, and causes the sponge bar to traverse the slots. The damping being completed, the pressure on the rod is withdrawn, and the bar returns to its first position by the action of a spring under the bent lever. No impediment being now offered to the descent of the upper block, the depression of the plunger is continued until the boxes are forced down and the damped part of the letter is pressed against the gummed side of the uppermost label. The apparatus for cutting labels is 1. a flat plate of brass, one-sixteenth of an inch thick, and "a little wider than the width of "a sheet of labels," with slots in it at such equal distances that when the plate is laid on the sheet a penknife passing down each slot will cut the sheet into strips of an equal width; 2. a block of wood, about an inch and half wide, and about two inches longer than the strips; and 3. "a piece of brass one-eighth of an "inch in thickness, and of the length and nearly the width of "the block," having slots in it at equal and proper distances, and fixed to the block by a screw at each end. The strips are laid on the block, the brass piece on the strips, the whole is held firm

by the screws, a knife passes down the slots, and the labels are "ready to be placed in the stamper or labeller."

[Printed, 1*s*. Drawings. See Mechanics' Magazine, vol. 36, p. 28.]

A.D. 1841, June 21.—N° 8996.

GAUCI, JOSEPH and BAIN, ALEXANDER.—"Improvements in "inkstands and inkholders." The invention relates to a mode of constructing inkstands in which the ink is supplied to the holder or dipping vessel, first, by means of a force pump, secondly, by causing "the ink vessel (or part thereof)" to move partly round. In the former construction the top of the cover has two apertures; into the one is inserted the holder to which is attached a bent tube communicating with a pump barrel; through the other passes a rod which raises and lowers a piston by a screw or other convenient means. In the barrel are two slots or openings, the one opposite to the tube, the other either above or below it, according as the ink is to be forced into the holder by the ascent or descent of the piston. Or the cover may have only one aperture; in this case, the tube serves as the rod, and the piston works "in a well or barrel formed at the lower part" of the inkstand. The tube is fixed in a cork or other suitable stopper, and when the stopper is pressed into the mouth of the ink vessel, the piston descends into the well, and the ink is forced up through the tube into the holder. In the latter construction, the ink vessel is a barrel or cylinder so secured in a frame that it is capable of moving partly round in it. The barrel has an air-hole near the top, and near the bottom a hole through which the ink may flow to and from the holder, which forms part of or is affixed to the barrel. For filling or using this inkstand the barrel must be turned round so that the surface of the holder may be horizontal or nearly so; and the ink is withdrawn from the holder by turning the barrel upwards until the holder meets a projecting part of the frame which serves as a cover to it. Or the barrel may be stationary in the frame, and one end only of it "carrying the "holder" move round; the end is then a metal cap "lined with "glass cemented within it," "the surfaces being ground together "in order to make a fluid-tight joint," and "kept close" by a spring which carries the cover of the holder and is screwed to the lower part of the frame.

[Printed, 1*s*. Drawings. See Repertory of Arts, vol. 17 (*new series*), p. 260; *London Journal* (*Newton's*), vol. 21 (*conjoined series*), p. 336; Mechanics' *Magazine, vol. 36, p. 29.*]

A.D. 1841, September 8.—N° 9069.

DREW, JOSEPH, junior.—"An improved method of rolling and "cutting lozenges, and also of cutting gun wads, wafers, and "all other similar substances, by means of a certain machine "designed by me, and constructed of divers metals and woods." Upon a suitable frame is an inclined plane, whereon are three or more pairs of rollers; if the material to be operated upon be of a tough nature, a pair of fluted rollers may be placed above the others. The rollers are coupled by toothed pinions "by which they are made to turn simultaneously in opposite "directions;" at the reverse ends of their axles are bevilled pinions geared to a lateral shaft mounted at the side of the frame. On the outer end of the lower roller of the top pair are affixed a fly wheel and winch or a pulley with a strap. Each roller is furnished with a scraper attached to a weighted lever. After the plastic material has passed between the rollers, it descends to the cutting apparatus, which is composed, 1. of a series of circular or other shaped cones having sharp edges at their upper ends; 2. a table, on which the cutters are mounted, sliding on two horizontal bars; 3. a plate jointed to one side of the table and perforated with holes corresponding to those of the cutters; this plate, called a "frisket," is laid over the cutters, and the material is placed upon it; 4. a "tympan frame" with a leathern back, jointed to the table; this frame covers the material and keeps it from shifting; 5. a heavy pressing roller turning in standards on the horizontal bars; 6. a board, "slidden into the carriage under the table," for the reception of the cut wafers, &c.; 7. a series of brushes to be passed up the cutters by means of a pendent jointed lever; and 8. a rack and its appendages for moving the cutting apparatus to and fro. A modification of the cutting apparatus is described, in which the cutters or punches are arranged to descend upon the material after it has been carried forward from the rollers on to a perforated plate.

[Printed, 1*s.* Drawing. See London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 91.]

A.D. 1841, November 11.—N° 9153.

DAVIS, ISAAC.—"Improvements in the manufacture of sealing "wax." The improvements consist "in forming the wax into "small sticks, each of which may contain a sufficient quantity for

" one seal," or for two seals, " by being double in its length with " a cut in the middle." To the end of each single stick, or to the outer ends of each double stick is attached " a detonating, com- " bustible, or highly inflammable substance," which may be ignited by friction or other means. The patentee makes various kinds of holders, in the clips of which one of the sticks may be held. The apparatus for making the sticks consists of two metal plates connected by a hinge joint; in each is a number of semi-circular or other shaped grooves, so formed " that they may be " coincident when brought together." The lower plate is secured to a stand by screws or bolts; the upper one, which is moved by a handle, is divided " longitudinally into compartments by the " insertion of a thin cutting plate of steel or other metal " which forms a nick on each stick, so that the wax, when removed from the apparatus, is easily broken into the proper lengths. The inflammable substance " is applied in a fluid state," or in any other convenient way. For making a very considerable number of these sticks at one operation a larger apparatus is employed, in which the plates are divided " transversely into compartments by " the insertion of cutting slips or ribs," and the upper plate is moved by a long powerful lever. The ends of two sticks may be inserted into a reed or quill, or other suitable material, by the following process:—Each of the grooves in the lower plate is divided into three parts; soft wax is spread over the outer ones; and a reed or quill is placed in each of the middle ones and held securely in position by a fluted bar laid on the top. The upper plate is then brought down, a block is placed on it, and the whole is pressed by a lever with power sufficient to force some of the wax into the ends of the reeds. The patentee claims the invention of " casting or moulding by pressure " sticks of sealing wax of larger size, such pressure producing " a beautiful form, and gloss " or polish on the surface."

[Printed, 10*d*. Drawing. See London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 170.]

A.D. 1842, March 21.—N° 9304.

HAUGHTON, JOHN.—" Improvements in the method of affixing " certain labels." The patentee announces this invention as an improvement of the one for which letters patent were granted to him June 19, 1841. In this one the label is damped and affixed to *the letter by pressure*. The machine is a four-sided rectangular

brass box (its bottom being the slide described in the former specification) divided internally by a brass partition, which does not extend to the bottom by about one-sixteenth of an inch; part of the top is immoveably fixed to the sides and to the partition. The part divided off holds a moistened sponge, which is depressed by a screw passing through the top. In the other part of the top is an orifice in which is fixed a tube serving to guide a plunger, at the lower end of which is a rectangular piece of hard wood about one-eighth of an inch thick, accurately fitting and working easily in this part of the box. To the bottom of this wood is fastened a piece of caoutchouc of the same size and thickness, the four sides of both "being bound by a thin plate of brass, the "caoutchouc being yet left $\frac{1}{16}$ of an inch lower than this plate." An opening of about one-sixteenth of an inch is cut across the lower end of one of the short sides of the box, and a groove is made in the other three sides, so that a thin brass slide can pass the whole length of the box. The two long slides and their grooves are prolonged to support the slide when drawn out. In the "opened end" of the box are two brass pins, not quite one-sixteenth of an inch long, "vertically fixed in its lower edge," and the blass slide has two slots corresponding with them. One end of the slide is "turned up," and to the part which slides under the sponge box, and which is thinner by one-half than the rest, is fastened a piece of sponge "divided into three parts by the two "slots." To place the labels in the box (their gummed side downwards) the machine must be turned upside down. The machine stands on a tray, in one side of which, "turned up at "right angles," are two slots, and two studs in the machine fitting into them keep it and the tray "in a right position during "the operation." The bottom being removed, the letter inserted, and the slide drawn back, the gummed side of the lowest label, damped by the sponge, is brought into contact with the letter, and pressure on the plunger causes it to adhere thereto.

[Printed, 8*d*. Drawing. See Record of Patent Inventions, vol. 1, p. 148.]

A.D. 1842, March 21.—N° 9306.

FREEMAN, MARK.—"Improvements in the construction of "inkstands." Five inkstands are described; in Nos. 1, 2, 3, 4, are two chambers, an inner (which is the higher one) and an outer, communicating by a hole near the bottom. The inkstand

is filled at an opening in the outer chamber, "which opening has "an air-tight cover screwed thereon." In 1, the dipping cup may have access to either chamber by an aperture in the inner, or by a tube descending nearly to the bottom of the outer. A cover fits into the top of the inner chamber, in which is a float moving freely therein, made of cork or other material, and coated with japan varnish or sealing wax. On the upper part of the float, on the side next to the dipping cup, is a rack "formed by a series of "pins," and below the rack a groove. The cover of the dipping cup moves on a hinge joint, and has "a projecting finger" which passes into the inner chamber, and by the uplifting of the cover depresses the float, thereby forcing ink up the groove into the dipping cup. When the ink in the inner chamber is lower than in the outer one, unscrewing the air-tight cover will restore the level. In 2, the dipping cup communicates with the outer chamber by having its tube screwed into a hole in the air-tight cover, but it may be placed so as to communicate with the inner chamber. Ink is forced into the dipping cup by a plunger (in the inner chamber), which is worked by a screw whose head passes through a cover fitted on to the top. A stud or projection in the chamber enters a groove in the plunger and prevents it from turning round. In 3 and 4, the float can descend below the hole of communication, as the chambers are so arranged that the inner one "will be supplied in a like manner to the action of the bird "glass or fountain." In 3, the dipping cup is placed as in 1, and the float is pressed down in a similar manner. In 4, there is not a dipping cup; the pen is supplied from the top of the inner chamber, whose lid turns on a pivot "which works in a "projecting piece attached to the inner surface" of the chamber, and "on the lower part of this pivot there is a screw of greater "diameter, forming a shoulder against the under surface of the "projecting piece, which screw works in a female screw formed "in the plunger, so that in turning the lid off the dipping place "this screw forces down the plunger." Two studs or projections are so arranged, the one on the inside and the other on the outside of the inner chamber, that when the dipping place is closed they "are received by two inclined planes attached to the lid." 5 has only one ink vessel, which rests on a frame of wood or other material; the vessel has a covering with two openings in it, the one through which ink is poured in and which has a cover with *an air-hole in it;* the other in the centre of the covering is cut

with a female screw, in which works one end of a bent tube (with a male screw formed thereon), serving at once for part of the handle of the inkstand and for a syphon, by means of which the dipping cup is supplied. The ink vessel is turned round the screw until the level of the ink is such "as to bring the syphon "into action to fill the dipping cup." The syphon is filled in the first instance by means of a funnel screwed into the cup, and in this manner the ink vessel may be filled if preferred. The different parts may be so arranged that the ink vessel may remain stationary and the syphon and dipping cup be made to move.

[Printed, 1*s.* 2*d.* Drawings. See Repertory of Arts, vol. 18 (*new series*), p. 341; London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 338; Record of Patent Inventions, vol. 1, p. 149.]

A.D. 1842, April 15.—N° 9324.

FARINA, CHARLES.—A new method of manufacturing sealing-wax, as well as certain other articles. Gelatine is obtained from bones and animal matters, "and boiled with alumina and ivory "black, or animal charcoal, and then filtered;" to this is added an equal proportion of purified resin. "The quantity of alumina "and ivory black can only be decided by the greater or less degree "of whiteness of the gelatine, but generally one-twentieth part "of alumina and one-twentieth part of ivory black are sufficient "to whiten eighteen parts of gelatine." The filtered gelatine is boiled with wax until it becomes of the consistency required, and the sealing-wax is made in the usual way. "Liquid or vapour "chloride of lime may be beneficially used" in the manufacture. The alumina referred to "is produced by the combination of alum "and soda, the caustic property of the soda neutralizing the "acetic property of the alum. In producing the alumina the "alum is dissolved by heat, either with or without the aid of "water. When the alum is dissolved, soda is added of the same "weight as the alum. A strong effervescence will then take "place, and alumina is produced." Ten per cent. is used "of "the different purifying and discoloring properties to the quantity "of other materials made use of."

[Printed, *4d.* No Drawings. See London Journal (*Newton's*), vol. 22 (*conjoined series*), p. 286; Record of Patent Inventions, vol. 1, p. 162.]

A.D. 1842, July 16.—N° 9420.

SCHLESINGER, JOSEPH.—"Certain improvements in ink-"*stands and in instruments* for filing or holding papers and

" other articles." Three inkstands are described. The first consists of a cylindrical ink vessel of metal, porcelain, glass, or other material, and a dipping cup communicating with it by an opening in the lower part. Ink is forced into the cup by depressing a packed piston in the cylinder having a rod cut with a double or treble threaded screw. On the top of the ink vessel is a cover, in the middle of which is a chamber wherein fitting loosely is a cap with two shoulders, one resting on the top of the chamber, the other for the purpose of turning the machinery. A nut or screw box in which the rod works is screwed into the lower end of the cap. This nut " is prevented from ascending by its " shoulder," and from descending by the shoulder of the cap. The ink vessel is filled by raising the piston and pouring ink slowly through the cup. The second inkstand has two dipping cups; the mechanism by which the screw is raised and lowered is similar to that of the first. The piston may be prevented from turning by slight packing, or by a projection on its side working in a vertical groove in the cylinder. In filling, ink should be poured in until it reaches the height of the bottom of the cups. The third has two reservoirs from which ink is " made to flow " simultaneously by one operation into a dipping cup or dipping " cups communicating with each reservoir." In each is a piston, on the top of which is cemented a metallic nut wherein the screw of the rod works. The pistons must be prevented from turning by one of the modes above described. On the top of each screw is fixed a toothed wheel, to which is fastened a pin passing through the cover and supporting the rod and piston by its shoulder resting thereon. Between the two reservoirs is a " toothed wheel of the " same size and taking into " those inside; this wheel turns on an axis supported by two stays, and has a nut on its top by which it is turned. The turning communicates motion through the wheels to the rod, the rotation of which raises or lowers the screwed nut and consequently the piston itself. In this inkstand too, the ink should not rise above the level of the bottom of the cups.

The improved clip or instrument for filing and holding papers is made as follows:—Two bent springs or strips of steel are fastened at one end by a screw to a card or board, at the other by a rivet to a bar of metal which rests on the card or board. Midway between the springs is a thumb plate fixed to the bar. By pressing the thumb plate so as to force it down the bar is raised and

the edges of the papers being placed immediately under it and the pressure withdrawn, the springs press down the bar and cause the papers to be held securely. The clip may be hung up by a hole in the thumb plate. A modification of the clip, "particularly adapted for holding music," consists in the metal bar turning on an axis, the ends of which work in boxes. These boxes are fixed on the board and contain each a coiled spring, one end of which is fastened to the box, the other to an end of the axis. The thumb plate is attached to the bar by a hinge joint, so that it can be folded back and "pressed close upon the bar," and music or papers may be opened "over the bar" without injury from the thumb plate. A second modification consists in the clip (with the mechanism of either of the former) being fixed to the side of a desk, which rests on a telescope stand and has a sliding frame capable of being drawn out, so that two leaves of a newspaper may be supported thereon.

[Printed, 8*d*. Drawing. See Record of Patent Inventions, vol. 1, p. 480.]

A.D. 1842, November 8.—N° 9514.

MITCHELL, JOHN.—"A certain improvement in the manufacture of metallic pens, and a certain improvement in the manufacture of penholders." The invention claimed is that of making metallic pens capable of being inserted into any ordinary holder, and penholders capable of receiving the barrel of any pen, without causing "a distortion of the whole pen," and interfering "with the proper and intended action of the nib." In pens this is effected by means of slits or openings, or slits and openings, of various shapes and sizes in the barrel, for the purpose of "enabling "the said barrel part to alter its curvature readily, so that the "said part may yield easily, in order to accommodate its curvature to the curvature of the penholder; and other openings or "slits must also be cut laterally in each side of the pen, so as to "partly separate the barrel part thereof from the nib part at each "side of those parts respectively," any such yielding of the barrel producing no effect on the nib part. Similarly the part of the penholder which receives the barrel of the pen "is cut with "slits or openings in any suitable manner," so that the barrel of any pen when inserted "will not have its curvature altered" and the action of the nib part injured.

[Printed, 8*d*. Drawing.]

A.D. 1842, December 3.—N° 9531.

COBBOLD, EDWARD.—"Certain improvements in instruments "for writing or marking, part or parts of which improvements "are applicable to brushes for water color drawing." The invention relates to pens in which ink is supplied to the nib from a reservoir in close connexion with it, and in which the nib "has in "some cases certain peculiarities of construction." Three kinds of pens are described. The first has as a reservoir "a cone, or "conical, or spire-like, or oblong supplier of wood, cork, metal, "or other suitable material," "in, upon, or around" which are formed various grooves or cells "from base to point," for receiving and retaining a supply of ink. At the extremity of the reservoir are inserted "two pieces of wire or one piece of wire either split "or doubled," "so arranged and compacted" that their points "are brought into exact and even contact." The patentee does not confine himself to the above shapes for the reservoir, nor to wire for the nibs; the latter may be of any substance "capable of "being wrought into fine wire-like or pen-like strips." In the second, "the base or obtuse extremity" of the wire nibs or pen-like points is inserted into a piece of cork or other suitable substance, which is fitted "into the barrel of the ordinary pen of "commerce," or "any pen-shaped substance capable of being "formed into a suitable reservoir for ink." They are bound fast together with a wire band or "in any other effectual mode," so as to render them capable of writing. In the third, "the shoulder of "the common steel pen" is reduced by filing or other process; or the pen is made, in a die constructed for the purpose, without a shoulder, so that "the entire substance of metal throughout the "whole length of the split, or even beyond it, shall be exactly or "nearly the same size or width." Into the barrel of this shoulderless pen is inserted a "barrel or reservoir of quill, metal, "or other suitable substance," cut somewhat into the shape of an ordinary pen, with "a split or open groove at the back," the point of it terminating about the sixteenth of an inch short of the end of the shoulderless pen. A reservoir of a different shape may be inserted into the barrel; and if the barrel be removed, the shoulderless nibs may be inserted into a reservoir described in the construction of the first pen. "An artist's color brush" is made by inserting each end of a quill or other fit receptacle into a "hollow body, of a conical, oblong, or egg-like shape," of wood,

cork, glass, or any substance capable of holding water, the external surface of the lower cone being grooved as before described. The brush is inserted into the bottom of the lower cone. The upper cone has a tightly fitting screw in its apex; the other has one screw near the top and one or more near the lower extremity. Instead of screws tapering stoppers may be used "capable of "adjustment by means of a spring and lever," or any other convenient method may be adopted. To charge the brush, the screw in the upper cone is taken out, the others are loosed, the lower cone is immersed, and the liquid is drawn in "by the mouth or "other suitable mode, at the orifice of the said upper cone." The screws are then set fast, and the supply to the brush is regulated by the "adjustment of the said screws."

[Printed, 8*d*. Drawing.]

A.D. 1843, March 16.—N° 9667.

ROBERTS, MARTYN JOHN.—"Improvements in the composi- "tion of ink, blacking, and black paint."

[No Specification enrolled.]

A.D. 1843, May 4.—N° 9719.

LONGMORE, JOSIAH.—"Certain improvements in pens, pen- "holders, and pencil cases." The first improvement in metallic pens relates to a method of giving additional elasticity by increasing the "virtual length of metal" in the part which lies between the point of the nibs and the shoulders. This is effected in various ways; by cutting the part between the points and shoulders into a "curvilinear ribband, forming a series of loops," or by cutting it out of the blank much longer than usual, and afterwards crimping or creasing it up, or by bending up the extra length "into one or more loops on the back of the pen," or by cutting out the nibs with an aperture between them, and thus bending them back under and up through this aperture, forming thereby "a circular or elliptical spring." The second improvement, "which adds greatly to the durability of the pen," consists in bending back a portion of the extremity of the nibs "to an "angle of from forty-five to ninety degrees," or in bending it quite flat down upon the back of the pen, or in "cutting the "pens out of steel of greater thickness at the point than else- "where," or when the blank is "cut out, pierced, and marked

" for the slit," in pressing the flat under side of the nibs together and making "what was the outer edge of the nibs the bearing " surface." The third improvement (to prevent the nibs from " bending under and spirting or sputtering the ink ") is effected by introducing on the under side of them a tongue, which may be cut out from between them or from the back of the pen, and then bent down under them. In penholders the improvement is in " the method of holding pens by means of a spherical or hemi- " spherical surface pressing the pen against the interior of the " holding tube," such pressure being given either by a spring or by means of an inclined plane. " A small sphere or ball of " metal, mounted upon a strong spring wire stem," is fastened to the inside of the stock. A pen, pushed up between the ball and the external holder tube, " is securely held in its place by the " pressure of the spring " upon the ball. Or the ball is mounted on a stem or lever which passes through and is fastened to a larger ball attached to the under side of the stock by a loose joint. The other end of the lever, " flattened and formed into an " inclined plane, rises partly through a slot in the upper part of " the stock," but " cannot pass quite out in consequence of a step " at its extremity. A ring, drawn back over the slot, slides upon and forces down the end of the lever, thus causing the smaller ball to press tightly against the pen. Or " the spring and holder " part " is one piece of metal of various shape, but the middle broader than the ends. The broad part is bent half round to fit the curve of a pen, and one of the ends " being struck up into a " hollow hemisphere " is turned back into the curve, and made to press so firmly against it that a pen may be held between them; the other end, " the spring part," is bent round until it is nearly parallel with the back of the curved part. The spring part is pinned or otherwise attached to a metal plug placed in the socket. On the under side of the socket is a slot, through which a pin, fastened to the plug, projects. By sliding the pin backward or forward the elasticity of the spring is diminished or increased at pleasure. The first improvement in ever-pointed pencil cases consists in a new arrangement of the part designated the motion. " The lower part of the tail " is soldered into the socket, a semi-diameter of the upper part being cut away; this part is supplied by a rack (carrying the propelling wire) which is made half round. The socket tail and rack together make a *cylinder, exactly filling* the external tube, which is " tapped inter-

" nally with a screw corresponding with the thread upon the " edge of the rack." The shoulder of the socket tail is " turned " of a conical, concave, or convex form, and the lower end of the " tapped tube is turned to fit." On the upper end of the socket tail, and secured thereon by a pin or otherwise, is a spiral spring, which " presses the tapped tube down upon the shoulder with " sufficient force to keep it in firm and pleasant contact, at the " same time allowing it to revolve freely." The second improvement " consists in a contrivance for projecting the pencil " motion out of the case, and at the same time elongating the " case itself." A semi-cylindrical rack is soldered or otherwise fastened to the "pencil motion;" a similar rack is attached to the "reserve tube;" and a pinion turns freely on a pin which passes through and is secured to the external case (which is made in two parts). The upper part is connected with the reserve tube and its rack by a pin, which passes under a projecting rim and forms a swivel joint whereon the upper part revolves freely. To prevent the pencil from being protruded too far, the last tooth in each of the racks is left much broader than the others, so that they cannot pass the pinion. The third improvement is a pencil case adapted for " Hall's patent metallic memorandum books." The usual alloy of lead is formed into a wire so as to project from a pencil case by means of a screw motion. An outer case of brass or other metal is tapped on the inside " with a screw thread " part of the way up from its lower end;" inside the case is a loosely fitting tube, "terminating in a point or socket," and having a slot extending nearly from top to bottom. Within this tube is a " carrier " (to which the metallic wire is affixed) with one edge (on which is cut a screw thread corresponding with that in the outer case) projecting through the slot. On the top of the carrier is soldered a metal head with a deep groove cut round it, in which a pin passing through the outer case works. By holding the point fast and turning the outer case, the carrier and its wire are moved up or down.

[Printed, 8*d*. Drawings. See Mechanics' Magazine, vol. 41, p. 267; and vol. 45, p. 300.]

A.D. 1843, December 8.—N° 9977.

BROCKEDON, WILLIAM.—Improvements in preparing or treating black lead. The invention relates to rendering solid, by pressure in dies, the powder produced in cutting and shaping

black lead. This is done more effectually by withdrawing the air from both dies and powder "before operating by pressure." Parts of the interior of the bed of the die are cut out of sufficient depth and width to receive the powder (to be made into a block) and four wedges, two on each side; the parts left being a segment at top and bottom, and two "solid bearings" or projections, parallel with them. When two of the wedges are placed along side of the projections, "their sides form a hollow parallelopiped" to hold the powder; the other two wedges are driven firmly in next the segments. Round the die is a rim cut so low that "a "dome may rest on it below the die for the lead." The dome is further secured by a stud, which is affixed to it and "enters "a groove formed in one of the solid parts of the die." The dome has on its top a stuffing box, through which a "con- "densing plunger" descends, and lower down, "a nozzle, to "which a pipe communicating with an air-pump is attached when "in operation." The air is pumped out, the plunger is "driven "down by a powerful fly-press or stamper, and the condensation" is effected. In order that the block of lead thus formed may be taken out of the cavity more easily, after the wedges are removed, the sides of the projections "are not quite parallel, and will "readily deliver on the widest side."

[Printed, 8*d*. Drawing. See Repertory of Arts, vol. 4 (*enlarged series*), p. 285; London Journal (*Newton's*), vol. 25 (*conjoined series*), p. 13.]

A.D. 1844, January 4.—N° 10,005.

HINKS, JOHN, WELLS, GEORGE, and FINNEMORE, JOSEPH. —"Improvements in the manufacture of metallic pens, and in "machines for manufacturing metallic pens." In pens, the invention claimed is the substituting iron for steel, and converting it in the process of manufacture into pens. Strips of the best charcoal iron are reduced by rolling to the desired thickness, and blanks are cut and pierced from them by dies. The blanks are put into an annealing pot in alternate layers with "vegetable "charcoal or other matter suitable for converting the iron," until the pot is nearly full. It is then filled with charcoal, covered to exclude the air, put into a "muffle" or other furnace, and kept there at a bright "worm" red heat for about 14 hours, by which time the iron will be converted, and "be in a condition to "*be treated (in completing* the making of pens from blanks) in

" the same manner as if the blanks had been originally cut from " strips of steel." Although the blanks are considered the best form to have the iron in, the process of conversion may be performed at an earlier or later stage. In machinery, 1. "the so combining a series of dies and apparatus for the manufacture of " metallic pens, that several processes may be successively performed on the same portions of metal as the same are moved " from die to die;" 2. the feeding of punching machines by means of rollers; and 3. "the mode of arranging dies for bending " blanks" by "causing the lower die to slide to and fro." On the driving shaft "is affixed an excentric, which works the " sliding plate by means of connecting rods" whose length is adjusted by screws and nuts. "The sliding is guided in V " guides" screwed to the end framings. There are two sets of punches and two sets of counter dies. On the shaft is also a plate with a crank pin, to which is attached one end of a connecting rod, the other end being united to an arm or lever which moves freely on an axis below. On the axis is a ratchet wheel, to which motion is communicated by a driver on the lever (while a click or stop prevents the wheel from moving back), and also bevilled toothed wheels which take into others " affixed on the axis of the upper feeding rollers." When motion is communicated to the shaft, it will be communicated to the punches also; and at the same time "motion will at inter- " vals be given to the axis," " which will move forwards the metal " from stage to stage." Thus a strip of metal being introduced between the first rollers, "each time of moving the shaft or axis" will carry it forward "a distance equal to that between the centre " and centre of two neighbouring blanks." The first and fifth punches stamp the metal with the maker's name; the second and sixth perforate it for the top of the centre split; the third and seventh form the side or shoulder splits; the fourth and eighth cut out the blanks. The patentees do not confine themselves to this particular order in the arrangement of the punches. In the machine for bending blanks the punch is worked by "rotatory " motion;" the lower die is hollow and capable of sliding to and fro in the bed plate, in front of which is a "projection or " finger" so fixed as to rest within the hollow of the lower die, by which means, as the die moves from under the punch, the bent blank will be removed. At the upper part of the lower die are two "guage plates," between which the workman places a metal

blank to be bent; his fingers are prevented by a guard from getting too far into the machine. To the back of the lower die is attached a connecting rod, sliding through a fixed guide, and having at its end a plate with a slot therein, within which the projecting stud of a lever moving on an axis works. In the lever is a slot through which works the stud of an arm affixed to the sliding plate which carries the punch. Hence as the sliding plate rises and falls, there will be a to-and-fro motion communicated to the lower die.

[Printed, 1*s.* 6*d.* Drawings. See Repertory of Arts, vol. 4 (*enlarged series*), p. 147.]

A.D. 1844, March 14.—N° 10,103.

STEPHENSON, FREDERICK.—"Improvements in book binding, "and apparatus for cutting book and other folded paper, part of "which improvements are applicable to penholders." The first part of this invention relates to improvements in binding books by applying, as ornamental covers and backs, tortoise shell and other shells of a similar character, horn stained to imitate the same, transparent surfaces of horn over engravings, water-colored paintings, or other ornamental devices, or veneers of wood. The second part, to combining a paper cutter with a penholder; and the third part to giving elasticity to penholders. The stem of the penholder "is formed at its upper end suitable for a paper cutter" of any shape or figure. In the lower part of the stem is a female screw for the reception of a spring screw fixed at the top of the holder. The lower part of the screw hole is formed conical, so that the spring screw will be allowed a degree of elasticity when in use.

[Printed, 6*d.* Drawing. See Repertory of Arts, vol. 5 (*enlarged series*), p. 16.]

A.D. 1844, June 6.—N° 10,219. (* *)

WOODS, JOSEPH.—(*A communication* [*from Mr. Baldermus*].)—"Improvements in producing and multiplying copies of designs "and impressions of printed or written surfaces."

First, "in the process termed anastatic printing, or obtaining "reversed facsimiles on metallic surfaces from designs, writings, "&c.;" and secondly "in the presses for obtaining impressions "from the said metallic surfaces."

The metallic preferred is zinc, used in the form of plates or cylinders, and polished by grinding with emery in parallel lines.

The design may be drawn on any clean well-sized paper with ink of a saponaceous or fatty nature. An "original" is charged with nitric or other "convenient" acid. If freshly printed, so as to yield a set-off, it is saturated with the acid, applied on the wrong side. It is then laid with its printed side upon the prepared plate, and passed with the plate under considerable rolling pressure, the reverse side being covered with blotting paper. Or the paper may be laid between two prepared plates, and an impression taken on both in the same way. Originals "of more than two months "old" are laid to soak for a period varying from twelve hours to some days, according to the length of time they have been printed, in the acid. The strength of the acid in which they are immersed is reduced by the addition of water to such a degree as not to taste strongly. The papers are partially dried by blotting paper laid on the polished surface, and subjected with the plate "to much greater rolling pressure than before." "If "saving of time is an object, and when the originals have been "very much indurated and dried, as in engraving, &c.," the latter are placed in a solution of caustic potash, and afterwards face uppermost in a solution of tartaric acid, which leaves the imprinted parts covered with crystals of cream of tartar. The "back lines" are then revived, either by passing a hard lithographic roller charged with ink over the original and cleaning off with an uncharged roller, or by means of the vapour of "con-"venient volatile oils," such as oil of turpentine, after which the crystals of cream of tartar are dissolved by immersing the original in dilute nitric acid. "When I wish to draw on the plate, I do so "with lithographic transfer ink while in its clean state, and wash "it over lightly with gum water containing a small quantity of "phosphatic acid, then rub in ink, and protect the blank surfaces "as next described; or I first treat the metallic surface with "phosphatic acid and gum, wash it clean, scrape away the parts "intended to carry ink, and rub them up as hereafter described." The original having been removed, the plate is washed over with thick gum and rubbed up with a mixture of lithographic ink and gum water wherever it has been protected from the action of the acid. In the transfer of "old work, this process should be repeated "at intervals of one hour or more." The plate is then washed with water and charged with ink with a soft leather roller. Spots of dirt are ground out with slate pencil and water. A "few "*hundred copies*" could be printed "in the usual mode" from

the plate as thus prepared; but as the fine lines have a tendency to thicken, the plate is washed over with a "solution of the "substance called by Dulong phosphatic acid, or, as termed by "Davy, a mixture of phosphorous and phosphoric acids, mixed "with gum water." The surface is thus slightly etched so as to reject the ink, or by continuing the process with stronger acid, may be transformed into a printing surface similar to stereotype. The mode of preparing the phosphatic acid is described. Two presses are described. The first is a hand press for printing from flat plates, consisting of a driving roller below the bed of the press turned by hand, and a pressing cylinder above it. An endless web of silk passes round the latter, and a roller immediately above it. A handle attached to a screw under a spring which supports the driving roller is moved through a short arc to exert pressure, the position of the handle indicating "the proper pres-"sure for printing and that for transferring."

The second is a "single-acting power printing press," consisting of an iron cylinder carrying the prepared zinc plate, and surrounded by a double set of washing and inking apparatus. The washing apparatus consists of washing rollers and washing rubbers preferably composed of linen twisted like a rope; for the latter it is laid into the surface in parallel lines; for the former it is worked round the cylinder helically. The washing rollers revolve at double the circumferential velocity of and in the same direction as the printing surface, and are damped by contact with trough rollers. The washing rollers and rubbers have endwise motions in contrary directions, thus producing on the plate a compound washing similar to hand washing. The inking apparatus are very similar, consisting of an ink trough, a "wandering" (vibrating) roller, a distributing and two or more inking rollers, the ink in each "system" increasing in consistency.

The paper is placed on a moveable table, where it is retained by a catch lever until the latter is lifted by a pin on a moveable segment with a cam, which acts on ä second lever carrying a feeding roller. On this lifting of the catch lever the table is released and drawn towards the feeding roller by a weight, directly after which the feeding roller is pressed into contact with the paper between an endless cloth roller and ribbons on the other side. At the same moment a register pin and lever is pressed up, and allows the tapes and endless cloth of strong silk to draw the sheet forward. *The action of the* segment cam at this moment draws the

table back for a fresh sheet. The impression is given by a roller above the printing surface, the former being "driven by contact "only;" or endless paper may be used. The press may, by the addition of a second cylinder, be worked as a perfecting machine.

By a Memorandum of Alteration, dated 6th December 1844, the title, which originally stood "Improvements in producing "designs and copies, and in multiplying impressions either of "printed or written surfaces," was altered to that given above.

[Printed, with Memorandum of Alteration, 2s. 2d. Drawings.]

A.D. 1844, August 29.—N° 10,297.

FREEMAN, MARK. — "Improvements in apparatus called "ever-pointed pencils." The invention consists in so arranging the apparatus that the forcing wire may be propelled a regulated or certain distance, and that this may be effected by the hand that is using the pencil, and that warning is given just before the lead in a pencil case is used up. Four of the five pencil cases described have each an external case, an inner tube fastened to it by a screw or stud, and the ordinary point or nozzle. In Nos. 1, 2, 3, the forcing wire has at the top a toothed rack, worked in 1, 2, by a lever which moves on an axis "fixed in the slide," and is so formed as to take into the teeth of the rack. In 1, 2, when a shield (affixed to each lever) is pressed, the rack will be moved downwards. In 1, a bent spring is so placed that, when the pressure is removed, one end of it will raise the handle of the lever; this will cause the other part of the lever to take into the next tooth, while the other end of the spring having a small projection on it will act as a catch and prevent the rack from moving back. In 2, the spring is affixed to or forms part of the lever. In 3, the rack is moved downward and prevented from moving back by two bent springs acted upon by a stud which passes through both cases and both springs, but influences only the outer spring by pressure. When a fresh supply of lead is required, a slight lifting of lever and stud will allow the rack to pass back freely. In both lever and stud is a notch to prevent them "from being pressed "inwards," when the inner tube is drawn back. In 4, the upper part of the rack has two rows of teeth, one row "being inter-"mediate" with the other. A coiled spring (the lower end pressing against a flange on the rack, the upper against a ring in the inner case) has "a tendency to press the forcing wire outward,

" but the same is controlled by means of an escapement," namely, "a sliding instrument having an opening through it," such that if the ends or buttons of it are pressed alternately, one of its surfaces will allow the rack to descend half the distance between two of the teeth. The forcing wire must be pressed back when a fresh lead is to be introduced. In 1, 2, 3, 4, the nozzle slides to and fro; but in 5, the machinery is in a separate case, and the external case forms a sheath, when the pencil is not in use. The mechanism differs from that of ordinary pencil cases only in having "the screw, in what manufacturers call the 'move-" 'ment,' cut in the reverse direction," in order that the finger may cause the lead to be moved outwards by pressing round a " wheel which is fixed or formed" on the nozzle. When the nozzle is in the sheath, a wire passing between two projections on the ring at the lower end of the sheath, and two placed a little above the nozzle wheel, prevents any turning and consequent wasting of lead. A projection is "formed on the rack, or means " of giving motion to the forcing wire, which projection coming " out of a hole in the inner tube, shows itself beyond the end " of that tube," thus indicating that the lead is nearly used up.

[Printed, 1*s.* Drawings.]

A.D. 1844, September 26.—N° 10,329. (* *).

MACKENZIE, Sir George Steuart.—"An improvement or " improvements in the manufacture of paper, more particularly " for the purposes of writing, and copying writings, and machinery " for effecting the same; also the manufacture of a fluid or fluids to " be used with the improved paper in the manner of ink." "The " paper (or parchment) is prepared after it has been sized, but " before it is finished, with a powder composed of about three " parts by weight of gall nuts (or salts prepared from them, or " from other substances containing tannin), anhydrous ferrocyan-" ide of potassium one part, carbonate of lime one part, rice flour " three parts." "For blue writing a powder is prepared, consist-" ing of anhydrous ferrocyanide of potassium, one part by weight, " and of rice flour, six or seven parts. The clear fluid used as " ink for the paper prepared as above is made with carefully " prepared permuriate of iron, or other persalts." "A black " indelible ink, from which copies may be taken on prepared

" copying paper, may be prepared in two ways; either by rubbing " down indian ink in a pretty strong solution of permuriate of iron " in water, or by making a stiff paste of the finest lamp black " prepared from bones, with strong mucilage of gum arabic, and " diluting this paste with a strong solution of permuriate of iron " in water (one measure of permuriate to seven of water)." The machinery for applying the powder to the surface of the paper consists of rollers and brushes suitably applied.

[Printed, 4*d*. No Drawings. See London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 26.]

A.D. 1844, December 2.—N° 10,410.

WRIGGLESWORTH, JAMES.—" An improvement or improve- " ments in steel pens." The invention claimed is " the rendering " of steel pens elastic or flexible by means of chemical agents " applied to certain parts thereof." The steel pens are made in the usual way of one thickness throughout. The points or nibs, and other part desired to be protected are dipped " in varnish, " drying oil, or liquid fat, or any other matter or mixture capable " of resisting the action of the chemical agents " to be employed in " reducing or shaping the part or parts required." The pens are then immersed " to any required depth and for any suitable " time, in nitrous acid, diluted to any specific gravity, and kept " at a temperature corresponding to the specific gravity, or into " any other chemical substance capable of eating away, biting " out, or reducing the metal to any desired extent." They are then plunged into hot water, " if they have been protected by any " fatty or oily substances, and into an alkaline mixture, if any " varnish or drying oil has been used, to rid or free them of any " of these or other matters which may be adhering thereto."

[Printed, 4*d*. No Drawings. See London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 40; Mechanics' Magazine, vol. 42, p. 432.]

A.D. 1845, February 20.—N° 10,529.

SANKEY, WILLIAM STEVENS VILLIERS.—" Improvements " in fastening and securing letters, packets, and dispatches." The invention is a clasp composed of two metal discs, one of which is to be attached to the flap of the envelope containing the letter, &c., the other " to the back of the body of " it, at the part which the flap overlays." The former has projecting from the centre of it a hasp, which is passed through a slit

made in the flap: the disc is then made fast to the outside of the flap by a solution of shell-lac or other adhesive substance. The latter is "a hollow button or disc with a raised rim, to which a "second disc or back piece is attached, containing inside, con- "cealed from view, a catch," which is "simply a straight piece "of metal made fast by a cross piece" to the button. This too is secured by like means, but on the inside of the paper and with the button uppermost. In the centre of the button is a slit, and a corresponding one is made in the paper. "On bringing down "the flap, and inserting the hasp" through the slits, the catch with a little pressure "slips into the hasp and holds the two parts "inseparably together." The position of the two discs may be reversed, and they may be fastened to the envelope by "side "prongs," instead of an adhesive substance; or if purchased "by themselves," they may be used without any fastening, except that of the hasp and catch. The catch may be "of a "coiled or curved form," or "it may consist of a bit attached to "the end of a coiled spring."

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 181.]

A.D. 1845, April 15.—N° 10,615.

FELTON, JOHN.—"Improvements in wafers, and in the means "of securing letters and notes from being surreptitiously opened." The wafers are of four different sorts, but the patentee disclaims the method described of making the first, second, and fourth kinds, claiming only "the composition" thereof; namely, the finest wheaten flour, with five times its weight of the gum of the phormium tenax mixed in as much water as will reduce it to a very thin paste; or a thin solution of isinglass, with as much in measure of the said gum added to it. The third kind is made by painting paper or very fine muslin with the last named composition. They "must be tightly strained upon frames and "anointed with two coats of the composition on each side, "observing to allow the first coat to become perfectly dry before "the application of the second, and the whole to be firm and "hard before it be removed from the frames. The muslin or "paper thus prepared is cut into sizes by punches or by any "other convenient instrument or machine." The wafers are cut "into rectangular shapes of two sizes, the larger are three-fourths "*of an inch by one*-half, and the smaller six-tenths of an inch

" by four-tenths. They are thus applied:—Moisten one of them, " and insert about three-fourths of its length under the fold of " the letter;" " impress it firmly with a seal, and then impose a " seal of wax upon the lower part."

[Printed, 4*d*. No Drawings. See London Journal (*Newton's*, vol. 27 (*conjoined series*), p. 344.]

A.D. 1845, December 10.—N° 11,000.

POOLE, MOSES.—" Improvements in apparatus to be used in " drawing or marking." " The invention relates to a mode of " constructing and arranging blades " for sharpening drawing and marking materials. The lead or chalk, with one end in a short tube, is moved up and down by means of a button, which works in a slot in the holder. When the lead or chalk requires pointing, a small case containing a series of small sharp steel blades is screwed on to the open end of the holder; the lead or chalk is thrust " among the interior of the blades," and a " moving of rotation " gives the required degree of fineness. " The blades may be arranged in separate cases made of wood, " silver, or any other material," or combined with the holder.

[Printed, 6*d*. Drawing. See Patent Journal, vol. 1, p. 61.]

A.D. 1845, December 23.—N° 11,016.

PERSHOUSE, HENRY.—" Improvements in apparatus used " in connection with writing, and also in attaching postage " stamps and labels." The inventions claimed are, 1. inkstands in which the dipping cup "is raised and lowered to the level " of the ink in the reservoir," or "closed by an elastic dia- " phragm," or by a valve and spring; 2. a pen wiper consisting of a sponge attached to the lid of a vessel containing water; 3. a stamp labeller; and 4. an instrument for sealing letters, &c. with wafers. One inkstand has a reservoir and a dipping cup connected with it by an elastic tube which is concealed in a case. The reservoir has an opening in the top for filling, and is enclosed in a stand which has a projection at each end on the side next to the cup. The cup is supported by "a horizontal " arm" in which is a hole "furnished with a concave" screw thread. A screw with a nut on the top, and cut with a convex screw thread, passes through the upper projection and the hole, and rests on the lower one. Before filling the reservoir the screw

must be turned until the cup is raised to its highest point, and afterwards lowered until it is on a level with the ink. In a second inkstand both reservoir and cup (formed with a screw on its outside) are of glass and earthenware. The cup is a hollow cylinder, the lower end being of a hemispherical form, with a hole for the ascent of the ink from the reservoir in which it stands. A cap, cemented or otherwise fastened on the neck of the reservoir, contains "a collar or washer of leather," which serves as a screw-box for the cup to work in. There must be an air hole in the cap. A third inkstand is a shallow reservoir with a cover, in the middle of which is an aperture for the cup. This cup has no bottom, but instead, a disc or diaphragm of suitable elastic material, "stretched on the under side of the cover" and fastened to a groove therein, "forms a valve" to it. The disc is cut into the shape of a star, or perforated in a variety of ways to allow the ink to pass from its under to its upper side. A thick piece of vulcanized india-rubber is sometimes placed in the middle of the disc to prevent the point of the pen from piercing it. A valve attached to a spring may be substituted for the disc. A gentle pressure of the pen on the disc or the valve will cause ink to ascend. Care must be taken not to fill the reservoir above the bottom of the disc or valve. The pen wiper is composed of a vessel of glass, earthenware, or metal, a lid hinged thereto, and a piece of sponge attached to the lid by a hollow button. The vessel is filled with water to such a height that, when the lid is shut, the sponge may touch the surface thereof. Or the lid may fit loosely, and have attached to it a tube with a sponge at its lower end. When about to be used, the lid is to be inverted; a small hole in the side of the tube allows any water that may run from the sponge to pass down into the vessel. Or the vessel may have a neck or mouth with a shoulder, on which rests the ring of a tube furnished with a sponge at each end. The first labeller consists of a hollow cylinder, "slightly contracted" at the upper end, and screwed or otherwise fastened to a square plate in which are four holes. In the cylinder a piston moves freely, having fastened to it four pointed wires which pass through the holes in the plate. A helical spring, resting on the upper surface of the plate, presses the piston upwards, and a thin rod, "situated in the axis" of the spring, and attached at one end to the piston, prevents it from descending too low, when pressed downwards. The spring may be omitted, in which case the wires are placed in the piston "not

" quite parallel to each other," and sometimes an elastic band is put round them. The postage stamp having been placed with its gummed side downwards on a piece of moistened sponge or cloth, the plate is placed upon it, and the piston depressed so that the points of the wires penetrate the stamp. It is then pressed on to the letter, and the spring, or the pressure of the wires, raises the piston and withdraws the points. A second labeller, " parti- " cularly applicable for attaching long labels or a series of postage " stamps," is a case inclosing a glass vessel filled with moistened sponge. The case has a hinged lid, to the under edge of which is attached a roller, and the side of the case " under the roller and the opposite side are cut away." The label being wetted at one end " is laid across the box " with the gummed side in contact with the sponge, and the wetted end projecting beyond the roller. The lid and roller " are then brought down upon the " label," the labeller is " partly inverted," and by drawing it " along on the letter or other article in a direction from the wetted " and attached end " of the label, the whole length of the label passes through, and is first wetted and then fastened by the pressure of the roller. When the labeller is not in use, the upper part is covered by a cap or cover. The instrument for wafering is made up of two arms, each at the upper end semicircular and furnished with a notch, and jointed at the lower end, where one terminates in a handle. The pressure, by which the wafer is held between the notches, is produced by means of an india-rubber ring stretched upon three pins, two of which are fixed in the handled arm, and one in the other which terminates in a projection. A slight pressure on the projection causes the arms to separate sufficiently to take up a wafer, which is then wetted and introduced between the surfaces to be sealed. A second pressure detaches the instrument.

[Printed, 8*d*. Drawing.]

A.D. 1846, January 29.—N° 11,060.

HALL, GEORGE FREDERICK.—" Machinery or apparatus for " writing and booking, numbering, cutting, checking, and expe- " diting the delivery and receipt of pawnbrokers' duplicates, " pass tickets, and other like documents." The patentee claims the invention of a numbering and cutting machine, a triplograph, and a diplometer. The first machine rests on a " wooden support,

" into which is screwed the sole plate," whereon stands an upright plate supported by a standard and stud. On the face of the upright is a toothed driving wheel, the axis of which passes through the plate and standard, and has at its end a double-armed handle " weighted with two solid knobs." Above and below the driver is a toothed wheel turning on a pivot passed through the standard. Fastened by pins to the face of these wheels is the shaft of the numbering box; the wheels by their rotation cause shaft and box to move in a "semicircular direction." On the face of the upright on one side of the driver is a third toothed wheel, " the " pivot of which carries at the back of the plate a small pinion of " six leaves, which takes into a sliding rack " connected at its lower extremity to a knife carriage; two cutters are screwed to this carriage, set at right angles to one another. The teeth of the driver are in the proportion of 30 to 24 of the top and bottom wheels, and of 30 to 16 of the side wheel. In the sole plate are " an ink pan " directly under the numbering box, " a stamping " bed of leather or india rubber " at the end of the semicircular motion, " a guide for the tickets," " a fender of thin brass which " keeps the tickets down after they have been numbered and cut," and " two steel edges affixed to the sides of two recesses " made for the reception of the cutters. To the axis of the numbering box is fastened an arm so acted upon by a spring lever that after each operation the numbers in the box are moved one forward. " A strip of six " tickets being placed with the first over the bed and with the bottom part against the guide, a push of the handle to the left will set the machine in motion and cause the first ticket to be numbered and cut " lengthwise and crosswise." The triplograph, or machine whereby three copies of each ticket are produced by one mechanical movement, stands on a " square wooden " frame, consisting of a top and side pieces without any bottom, " and resting on four feet." The top is made in two parts, the one fixed, the other moveable; when the latter is in its place, it overlaps the former. Across the fixed part is a roller turning freely in bearings raised from the sides of the stand, and underneath the moveable part is another but smaller roller. On one side of the stand are two brackets supporting an inkholder; at the back a bracket from which rises a pillar with two parallel bars moving on centres attached to its top. At the ends of the bars is a swivel frame, to the bottom of which a curved brace is fixed *crosswise; and swinging* in bearings at the end of the brace is a

frame, through two orifices in which a bar passes free to move in all directions, but limited in turning round by two cross bars, which rigidly connect another bar to it. Dependent from the last bar and firmly fixed to it are three pen carriers, to the bottoms of which penholders are made fast by screws and nuts and adjusted to any inclination. "A half sheet of demy paper, ruled into square "compartments of the size of the tickets to be copied, is attached "to the rollers," (one end being made fast to the larger and thence passed over the smaller) with a sheet of blotting paper under it. A double row of tickets is laid upon the moveable part, and "pushed up to the edge next the ledger sheet, where they are "held fast by spring catches." The pens are supplied by moving the swinging frame across to the inkholder; they are then drawn back until they are in a line with the first series of tickets. The pen farthest from the larger roller and having a handle, "is then "taken in hand, and the undermost ticket written upon with it," and every movement given to that pen is communicated to the others, and the three copies are made at the same time. "Two "friction wheels with semicircular grooves may be attached to "each side of the swinging frame" if found necessary. More than three pens may be attached to the bar, if a greater number of copies be required. The diplometer is a machine for keeping an exact registry of all redeemed pledges. It is locked up in a box, with the exception of a projecting sliding tablet, to lay the ticket upon. On the sole plate are three standards (two on the sides and one near the back) "which carry the numbering apparatus" by means of a crank, "the traversing axis of which passes through "the shoulder of the date box." The date box consists of five cylinders placed side by side on a square axis, "each cylinder "having a set of numerals or letters engraved in relief on its peri-"phery;" on the outside one, the first twelve letters of the alphabet to represent the twelve months, on the other four the ten numerals. To each of these four is a "spring detent," attached at its fast end to a bridge raised on a shaft which "projects back-"wards from the number box" and passes through a ring "gim-"balled into an orifice" in the back standard. The hooked ends of the detents "lay hold successively of ten pins, which project "sideways from the periphery of each cylinder at the points "immediately opposite the figures." On the outside of the unit cylinder and attached to the same axis is a wheel with a "tappet" projecting from its periphery; at every return stroke of the num-

bering apparatus the tappet catches hold of one of the pins and moves it one forward. The other three cylinders have contrivances attached to them "which cause each one of them to be moved one "forward once in every ten strokes of the apparatus." The month cylinder does not revolve with the others (the axis being rounded where it passes through it) but must be moved forward monthly by undoing a screw at its side. A lifting lever "is con- "nected at one end of the axis of the date box, and linked at top "to a strong spring screwed to the sole plate." A traversing frame (of which the sliding tablet forms the outer end) slides to and fro on the sole plate within the side standards; on it are two racks by which it takes into two pinions fixed on the crank. A horizontal shaft with a spiral spring coiled round it, and having its shoulders fastened to the racks, passes freely through an orifice in the under part of the back standard, near which part is a "counter check," (consisting of a single disc and spokes,) which "revolves with the spokes pointing downwards on a pivot stepped "in the sole plate." A long spring, projecting from one of the racks, "lays hold at each inward movement of the frame of one of "the spokes," "while the disc is in its turn caught on the opposite "side by a spring screwed to the face of the sole plate." The part of the projecting tablet on which the ticket is laid "is covered "with cloth, india rubber, or some other like substance," and a ledge with side cheeks keeps the ticket in its place. Between the racks is an ink pan "on which the date box rests when out of "action." The machine works by an inward pressure of the projecting tablet. In a less expensive modification of this machine there is no month wheel, and the numbering cylinders merely register "the number of strokes made by the machine." The types which imprint the date on the ticket "are inclosed in a "chase" (attached to a short shaft projecting from the front of the registering box) "which is brought down at each stroke upon "the stamping place." The types must be altered daily to indicate the day, month, and year.

[Printed, 1*s.* 4*d.* Drawings. See Mechanics' Magazine, vol. 45, p. 265.]

A.D. 1846, February 25.—N° 11,113.

BROWN, JOHN HARCOURT.—"Improvements in securing "letters, envelopes, covers, despatches, packets, and parcels." *The invention relates to* variously shaped metal fastenings attached

to the lappets of envelopes. The first kind consists of a short tube with a flange at its lower end, which is cemented to the inner side of the lower and side lappets, the tube protruding through them. On the outer side of the upper lappet is fastened a ring through which the tube passes, when the lappet is folded down. A stamper with its lower end made to fit into the tube, and with a shoulder a little above, when brought down on the edge of the tube will press it outwards and fasten the envelope. A wafer of gum or paper cloth, or of paper and cloth, may be substituted for the ring. Instead of the stamper, an apparatus may be used, composed of a block "provided on its face with a projecting stud," and a flat plate suspended over it by a spring, which is attached to a weighted lever mounted on the block. A second kind consists of two caps, each provided with a flange. The smaller fits into the larger which "has a ring or circular beading raised upon its flange," and a hammer or stamper crushes them together. A third kind consists of two discs; the centre of the lower one "is punched up to "form a tongue, and to the other a strip of metal is brazed or "soldered to form an eye, which receives the tongue." A blow from a hammer "will force down the end of the tongue into a "hooked shape." A fourth kind is composed also of two discs; the lower one "bent up so that it has a loop in its centre," the upper one with a slot cut in it to admit the loop, "and round this "slot a beading is raised to form a recess on the face of the disc." The loop will be flattened by the blow of a hammer. A fifth kind holds fast without a blow. It is made of two pieces of metal, each with a body and two shoulders. When the body of the one is cemented to the upper lappet, the lower shoulder passing through a slit therein "is bent over to form a hook." The shoulders of the other piece pass through slits in the lower lappets and are folded back. The hooked tongue is inserted through the folds into a slot in the body of the lower piece, and the straight shoulder is inserted in the same way over the hooked one. In a modification of the last described apparatus, the two pieces are without shoulders; one having a hooked end is fastened to the upper lappet by two small stamped out tongues passing through it and pressing down on it. One end of the other piece passes through a slit in the side lappets and is pressed tight on them, while "the other end is folded over their edge." In the lower lappet a curved slit is made to receive a wafer. When the hooked end is inserted into a slot in the lower piece, the under part of the

wafer and of the small lappet formed by the curved slit " is wetted " and stuck down so as to cover the metal fastening."

[Printed, 10*d*. Drawing.]

A.D. 1846, March 25.—N° 11,149.

SMITH, CHARLES.—The patentee claims the invention of applying to inkstands, as well as to various other articles, a circular cover, which fits into a groove in the stand, and prevents " the " intrusion of dust, and also, to a considerable extent, evapora- " tion of the ink."

[Printed, 3*s*. 6*d*. Drawings. See London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 356.]

A.D. 1846, May 19.—N° 11,211.

DUNCAN, GEORGE.—Machinery for cutting wafers and other articles. Hollow cutters set in a frame are caused to rise up, through a table perforated with as many holes as there are cutters, against a flat surface. The rise is effected by means of rods moved by cranks and other rods on an axis which is set in motion by steam or other power. The wafer sheet is moved forward to the table by an endless apron carried by two rollers, the front one receiving motion from a ratchet wheel on its axis. The ratchet wheel is moved each time that the cutters descend by a driver affixed on an arm moving on the axis of the front roller. This arm is connected by a rod to one end of a lever, the other end being attached by a connecting rod to one of the rods which cause the rise of the cutters.

[Printed, 1*s*. Drawings. See Repertory of Arts, vol. 10 (*enlarged series*), p. 13; Patent Journal, vol. 2, p. 446.]

A.D. 1846, May 19.—N° 11,212.

PERRY, STEPHEN.—" Improvements in the manufacture of " rings, straps, bands and bandages, cords and string, and in " their application to clockwork, to locks and other fastenings, " to presses, to books, to paper-holders, to candle lamps, to " window sashes, to doors, to window blinds, to seats and surfaces " for lying and reclining upon." This invention consists in the application of straps or bands of india-rubber (prepared in the manner described in the Specification of Letters Patent granted *to Mr. Alexander* Parkes, of Birmingham,) to a great variety of

articles, among which are copying presses, book covers, portfolios and paper-holders. Endless bands are cut out of sheets, or from tubes of the prepared rubber; and in a copying press (composed of top and bottom plates and lever) the bottom plate and the back end of the lever are connected by a strong band, "which acts as "a spring to allow of a degree of yielding when pressing any-"thing between the two plates." To keep a memorandum book or portfolio closed, the two ends of a strap are sewn, rivetted, or otherwise fastened to the sides of the cover, or "only one may "be fastened to one cover, and the other end may have a button "hole or a series of button holes" to button or hook on to the other cover. Thin springs of the rubber are fixed at their ends to the backs of portfolios, "so that a series of folded sheets of "paper may be placed under each." A paper-holder consists of a piece of cardboard or other substance, of a strap of rubber secured at one end to a side of the cardboard and passing over its surface, through a loop or eye, and on to a hook or projection at the other side, and of another strap similarly secured at the bottom and fastened at the top of the cardboard; the straps may be partly of india-rubber and partly of leather, cord, or other material.

[Printed, 2s. 4d. Drawings.]

A.D. 1846, May 28.—N° 11,229.

BLYTH, JOHN.—"An improved mode of closing the orifices of "bottles or other vessels, applicable to inkholders." The mode invented is "by the reaction of any kind of spring or counter-"weight or floater" applied to "an internal flap, or valve, or "door." In the upper part of the inkholder is an aperture, into which a ring is fitted either by packing or cement. A valve, larger in circumference than the ring, is "borne upwards" against it by "a slender helical spring" placed "beneath the lower end "of a moveable vertical stem." The spring, made of metal wire "not liable to active corrosion by the ink," and the stem are in a tube, which either passes through the bottom of the inkholder or stands upright therein, "being formed in the solid therewith;" in the former case, the lower part of the inkholder "rises with a "dome-shaped convexity," and the tube has a flange round its upper end and is fastened into its place by means of a nut screwed on to its outside, collets of leather, india rubber, or other suitable packing being previously applied beneath the flange and above

the nut. The stem is rounded at the top and acts in a corresponding cavity in the valve, and on its lower end is a "projecting "head" which fits loosely into the tube above the spring. The valve may be attached to the ring by a hinge, and instead of the spring and stem may be used "a flat blade spring," with one end fastened to the ring and the other turning up beneath the cavity of the valve. The requisite spring may be given by attaching to the valve, by means of a circular rim projecting downwards, a caoutchouc air bladder, or simply a piece of caoutchouc with an air hole in it. The stem must now be fixed motionless with its top pressing against a small shield cemented to the bottom of the bladder or caoutchouc. Or the stem may be fastened to the centre of "a floater" either floating on the surface of the liquid or submerged; if submerged, it may be made of one or more pieces "overlapping one another at the common centre;" in either case it has "radial arms" by which it is fastened to the inkholder. By surmounting the aperture with "a sort of hollow turret" and applying the valve to one side thereof by a hinge, a vertical opening may be obtained, which can be kept closed by a spring, or by a counterweight, or by both.

[Printed, 8*d*. Drawing. See Repertory of Arts, vol. 10 (*enlarged series*), p. 90; London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 405; Patent Journal, vol. 2, p. 523.]

A.D. 1846, June 29.—N° 11,266.

MILL, WILLIAM.—"Improvements in instruments used for writing and marking, and in the construction of inkstands." The inventions relate to ever-pointed pencils, penholders, and inkstands. The pencil case consists of, 1. a tube with a male screw cut on its surface throughout its whole length, and a slot as long (the bore of the tube being sufficient to admit the largest sized leads in general use); 2. a nut with a female screw to run on the tube, and an internal groove to receive the bent and flattened head of a propelling wire; 3. a stop on the top of the tube; 4. a collar for the nozzle fastened firmly on the lower end of the tube and having a groove near the upper end (the diameter of the collar equals that of the tube); and, 5. a spring accommodating or expanding joint (a metal tube of sufficient bore for the largest leads, but made by slitting and filing the lower part capable of clipping the smallest ones when it is collapsed) inserted partly into the nozzle. This "*movement*" is inclosed in an outer case of gold, silver, or other

suitable material, having a slot nearly its whole length. A spring is now applied to the groove on the collar, and a pin, passing through a slide on the case and the spring, allows the movement to slide tightly in the case and to revolve. A stud on the nut, projecting a little through the slot in the case, prevents it from revolving except with the case. If the shape of the case be not cylindrical, and the nut be of the same shape and fit closely, it cannot turn in the case, and the slot therein need not be longer than is required to draw the nozzle to and fro. The pencil case is charged by passing the lead through the expanding joint. The first improvement in penholders is the cutting out from the barrel two "spring flaps," which have the same curve as the barrel, except at the lower corners, where they "are bent inwards to "facilitate the entrance of the pen." The second improvement is the introducing "a yielding or accommodating inside bearing "or support for the pen" into the barrel of a holder made of metal "not capable of being hardened and tempered after being "formed into shape." This support is an elastic or spring tube (such tube should be drawn "hard") from which about one-fourth of the circumference of the under side is cut away. Two projections are formed on it, "one on each side of the front end" to prevent the pen "from moving sideways;" it is fastened to the inside of the barrel by a pin or rivet, which is fixed firmly to the barrel, but fits loosely in the tube. The barrel "has an open joint "throughout," which is concealed by "a thin slip of curved "metal" inserted within it and soldered to one side of the joint. The third improvement relates to "Bramah penholders." The patentee connects "the moving part or outer support" to the main part of the barrel by one pin only, which is fixed firmly in the back of the former, but loosely in the latter, so as to allow the former "to swing when released from the slide." The first described inkstand is composed of a stand and an inkholder, the latter resting in a tube in the former. The cover of the inkholder turns on axes carried in slots in two standards, and its end is connected by a rod to a "horse-shoe beam" moving on an axis in the tube. The parts are so arranged and adjusted that a pen, when placed in a receiver which is carried by the beam, will by its weight cause the cover to shut, and by its removal to open. The patentee does not confine himself to this particular arrangement of the pen. The second inkstand is of a curved shape, the end forming the mouth or dipping place being the narrower one. A

screw works in a nut attached to the larger end, and by its moving up and down maintains the level of the ink at the dipping place. The last invention is making a penholder serve as a stopper to a portable inkstand. This is effected by screwing a penholder with a female screw at the upper end of its cap on to a case containing an ink vessel, and having a male screw outside its neck or shoulder. A spring at the bottom of the case presses the ink vessel upwards against the cap.

[Printed, 1*s.* 2*d.* Drawings. See Repertory of Arts, vol. 17 (*enlarged series*), pp. 51, 103, and p. 58 for Disclaimer; Mechanics' Magazine, vol. 53, p. 433; Patent Journal, vol. 9, p. 147; vol. 10, pp. 63, 98; and vol. 11, p. 29; Beavan's Reports, vol. 14, p. 312; Jurist, vol. 15, p. 59; Common Bench Reports, vol. 10, p. 379; Lowndes, Maxwell, and Pollock's Reports, vol. 1, p. 695; Law Journal (Common Pleas), vol. 20 (*new series*), p. 16.]

A.D. 1846, July 6.—N° 11,281.

DOWNING, GEORGE.—"Improvement in the manufacture of "penholders."

[No Specification enrolled.]

A.D. 1846, September 24.—N° 11,385.

CHINNOCK, CHARLES. — "Improvements in folding and "securing letters, envelopes, and covers." Three different methods are described:—the first, by cutting a hole, somewhat less than the size of the adhesive label to be used, in the proper corner of the envelope; the label will then lay hold of the edges of the hole of "the turned in piece by which the end of the "envelope is fastened, and also of the note or paper within." The second, by punching holes of different sizes through those parts of the envelope where the seal is usually placed, the undermost being the smallest. "The wafer or wax used will lay hold "of and secure each lap and also the enclosure placed in the "envelope," or, if preferred, (a small piece of blotting paper, which may be placed on the enclosure under the holes). The third, by making the envelope in such a manner that the upper lap folds over the front, with the broadest part at the place where the label is to be fixed; if a hole be cut similar to that first described, the label will adhere at once to the enclosure, edges, lap, and turned in piece.

[Printed, 8*d.* Drawing. See Repertory of Arts, vol. 12 (*enlarged series*), p. 386; London Journal (*Newton's*), vol. 30 (*conjoined series*), p. 328; Practical Mechanics' Journal, vol. 2, p. 171; Patent Journal, vol. 2, p. 792.]

A.D. 1846, October 15.—N° 11,412.

MAW, JOHN HORNBY.—"Improvements in the manufacture of "pens."

[No Specification enrolled.]

A.D. 1846, December 3.—N° 11,474. (* *)

READE, JOSEPH BANCROFT.—"Improvements in inks and in "the processes by which the same are manufactured, and the "application of some of these processes to the production of "certain salts." First, making "a blue writing ink free from "acid" by dissolving in iodide of iron half as much of iodine as it already contains, and pouring this solution "into a semi-"saturated solution of yellow prussiate of potash" containing about the weight of salt as there was of iodine used. The precipitate, "which is a soluble Prussian blue," is "washed," and finally dissolved in water "forms the blue writing ink."

Second, producing iodide of potassium. The solution from the last process is "neutral iodide of potassium, with iodide of iron in "excess;" the excess of iodide of iron is got rid of "by the well-"known processes of fusion and crystallization," "the result is "an iodide of potassium" pure.

Third, manufacturing "a blue ink especially suited for printing."

Fourth, producing bromide of potassium from the residue, as in the second process.

Fifth, the manufacture of a "black writing ink" by adding to "gall ink of a good quality from a tenth to a twelfth part of the "soluble Prussian blue."

Sixth, manufacturing a red ink "by boiling cochineal repeatedly "with water, afterwards" with water containing liquor ammoniac. The liquids are thrown together, and the colouring matter precipitated by "ammonio bichloride of tin. The precipitate is after-"wards dissolved in ammonia and protiodide of tin added till a "sufficient degree of brilliancy of color is obtained."

Seventh, manufacturing marking ink by rubbing together nitrate of silver and tartaric acid in a dry state, then adding water; tartrate of silver is formed and nitric acid is set free, adding ammonia. finally adding "gum, colouring matter and "water."

Eighth, manufacturing marking ink not acted upon "by the "common solvents of salts of silver" by taking "the ink last

" formed " and adding to it " an ammoniacal solution of an oxide " or salt of gold," as the purple of Cassius, " hyposulphite of " gold, ammonio iodide, and periodide of gold."

Ninth, the production of these two last salts by dissolving iodine in ammonia with heat, adding to this solution gold leaf, which immediately dissolves, but diluted with water the action is less rapid. This salt " crystallizes in four-sided prisms, which are " soluble in water."

Tenth, the manufacture of blue, black, and red printing inks.

[Printed, *id.* No Drawings.]

A.D. 1846, December 14.—N° 11,492. (* *)

VICKERS, BENJAMIN (*a communication*).—" The mechanical " chirographer, or machine for delineating letters, figures, and " other characters."

The principle of this invention " consists in communicating to a " pen or pencil holder the motions necessary to delineate any " and all letters and other characters by motions at right angles " to each other obtained by sets of cams, each set being so formed " as to combine the right angle movements, and thus generate " the vertical, horizontal, oblique, and curved lines required to " delineate the letters or characters. Each set of cams is actuated " by a separate and distinct lever or handle, as in a pianoforte, " and the table with the paper, &c. caused to move forward the " required distance at the termination of each letter or character " by the return motion of the lever or handle."

The series of cams are mounted on a horizontal shaft, and act, by means of bars, rollers, and studs, upon one or both of two sliding frames, one horizontal, the other vertical, the pencil being attached to the vertically sliding frame. All the cams in each set, for the production of one letter or character, move together and are provided with a ratchet wheel and " spring hand," on a drum around which a cord is wound, and carried to a lever or handle, by the depression of which the cams are carried round one entire revolution, and there retained by the friction of a spring, whilst the drum and lever are drawn back by a volute spring within the drum.

To space off the letters and horizontal lines, horizontal and vertical motion is given to the paper by means of frames acted

upon by rack, endless screw, toothed wheel, and ratchet gear in connection with the handle during its return motion.

[Printed, 10*d*. Drawings. See Patent Journal, vol. 3, p. 128.]

A.D. 1847, January 12.—N° 11,526.

BRITTEN, JOHN.—"Improvements in machinery or apparatus "for printing, ruling, and damping paper for various pur- "poses." The parts of the invention which belong to this series are those for ruling and damping. The apparatus for holding the pens in ruling machines consists of a series of levers (similar to what is commonly called "lazy tongs"), to the lower rivets of which the penholders are attached, the upper rivets sliding in slots. The damper for postage labels is composed of two vessels; the inner one is entirely covered with cotton, velvet, or some other capillary material; and, when it is filled with water and the material thoroughly moist, it is inverted into the outer one, and presents a damp surface as long as any water remains in it. To construct a damper for the leaves of copying books, &c., two horizontal plates are placed in a cylindrical metal vessel, "forming a longitudinal neck." A tongue of cloth, felt, or other capillary substance, passing double between the plates and returning up the sides, makes the joints between the edges of the cylinder and the plates water-tight. The cylinder being filled with water, the tongue, when once thoroughly damp, will continue so as long as there is any water in the vessel. To use this damper, it is inverted, and the tongue is drawn over the paper.

[Printed, 10*d*. Drawing. See London Journal (*Newton's*), vol. 33 (*conjoined series*), p. 1.]

A.D. 1847, February 1.—N° 11,554. (* *)

DAFT, THOMAS BARNABAS.—"Improvements in constructing "inkstands, and in fastenings to elastic bands."

First, "the mode of making elastic inkholders and dipping cups, "and combining therewith apparatus for receiving and com- "pressing the same." The inkholders are made of india rubber, by cementing the parts together, when they are "vulcanized." The inkholder has a dipping cup above it, and by pressing the inkholder, the ink rises into and remains in the dipping cup until the inkholder is allowed to expand to its elasticity, which it does if a certain nut be drawn or turned back.

Second, " fastenings for elastic bands." It is stated that " it " is difficult to attach any instruments for fastening elastic bands " made of vulcanized or converted india rubber, owing to " ordinary cements not attaching themselves to such preparations " of india rubber: " and to obviate this " two parts of an elastic " band have attached thereto two eyes of metal." " The ends of " the elastic bands are passed through the eyes, and folded " down," and then bent plates of metal are placed and pressed so as to bind the parts; a double hook hooks into the eyes of each of the straps, " and thus there is a secure fastening produced." Or the ends of two india rubber bands are turned over and cemented, leaving an eye opening through; they are then vulcanized, and " a staple put through the eyes " at the end of the bands will secure them together.

[Printed, 1*s.* Drawings. See Repertory of Arts, vol. 10 (*enlarged series*), p. 146; and Patent Journal, vol. 3, p. 262.]

A.D. 1847, March 23.—N° 11,636.

KEMPTON, WILLIAM HENRY.—" Improvements in copying " presses." The " invention consists of a copying press so " arranged, that the act of shutting a lid or cover acting on a bed " or surface is by the resistance of a spring or springs caused to " produce the requisite pressure for copying letters or other " documents." The press is composed of a rectangular frame, a bed constantly pushed upwards by a spring, and stops to prevent the bed from rising too high. The document to be copied, " with " damped paper and other materials, as in other flat copying " presses," is placed on the surface of the bed, and the closing of the lid will cause the bed to be pressed downwards. " The " lid is to be retained shut by a bolt or other means for a short " time, when the desired copyright will be obtained." More than one spring may be used, or other means employed for giving the requisite elasticity, " and the lid or cover may be resorted " to."

[Printed, 6*d.* Drawing. See Repertory of Arts, vol. 10 (*enlarged series*), p. 271; Patent Journal, vol. 3, p. 458; Engineers' and Architects' Journal, vol. 10, p. 390.]

A.D. 1847, April 27.—N° 11,671.

HAHNEMANN, MARIE MELANIE D'HERVILLY, and PETIT-*PIERRE, HENRY.*—"Improvements in instruments for writing,"

or in the construction of a "fountain pen." The ink tube or reservoir of gold, silver, porcelain, or other suitable material, has at the upper end a chamber with an air-hole in its bottom, and in one side another formed by unscrewing "a hollow screw or cock." On the top of the cover to the chamber is a recess for a seal, &c.; in the inner part a "groove, into which is fitted an elastic plug, "by which the top is screwed on air-tight." At the lower end of the reservoir is a piece of copper or other suitable material, which "acts as a stopper or cork." Through a hole in the centre of this piece is inserted a screw-cock which has an ink passage through it, and "on its exterior four teeth which indicate the "flow of the ink." At the bottom of the piece is a small tube for conveying ink to the pen; the position of the pen is adjusted by "a regulating screw." On the side of the piece is "a lever "carrying a spring," which opens and shuts "a sunk plate" "fixed by a screw to the inner part of the tube," and thus gives or stops passage to the ink. The flow of the ink is adjusted by means of "a small flatheaded screw placed upon the small lever." A case is made for the pen when not in use. To fill the reservoir the top must be taken off, and the cocks shut.

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 11 (*enlarged series*), p. 245; London Journal (*Newton's*), vol. 31 (*conjoined series*), p. 417.]

A.D. 1848, March 27.—N° 12,106.

BABINGTON, BENJAMIN GREY, and SPURGIN, JOHN.—"Improvements in the manufacture of metallic pens." The "invention consists of applying zinc, or a suitable alloy of zinc, "in contact with metallic pens in such manner as to produce "galvanic action when the pen is in use or containing ink, and "thus confine the oxidation or corrosion to the zinc." A piece of zinc is passed through a hole a little above the shoulder of the pen, where it is "spread out or rivetted" and continued to near the nib. The patentees consider this to be the best and simplest method, but other means may be employed, or the zinc may be affixed to the penholder, provided that the zinc "be in such con-"tact and be so placed in combination with the pen that when "containing ink a galvanic action will be produced."

[Printed, 6*d*. Drawing. See Repertory of Arts, vol. 12 (*enlarged series*), p. 384; London Journal (*Newton's*), vol. 33 (*conjoined series*), p. 268 Artizan, vol. 7, p. 57; Patent Journal, vol. 6, p. 25.]

A.D. 1848, May 4.—N° 12,146.

STOCKER, ALEXANDER SOUTHWOOD. — Improvement in manufacturing show cards or holders for pens, as well as for various other articles. The cards or holders are of metal, stamped or pressed in dies, so as to leave a projection near the upper and lower ends. In the slanting surfaces of the projections holes are perforated to admit the extremities of pens. The patentee proposes to have steel pens manufactured "with tail pieces," that they may be more readily inserted into his cards.

[Printed, 10*d*. Drawing. See Mechanics' Magazine, vol. 49, p. 474; Artizan vol. 7, p. 83; Patent Journal, vol. 6, p. 66.]

A.D. 1848, August 29.—N° 12,258.

CHREES, ELIZABETH.—"Improvements in the manufacture of "sealing wax."

[No Specification enrolled. Title printed.]

A.D. 1848, September 28.—N° 12,278.

GILLOTT, JOSEPH, and MORRISON, JOHN. —"Improve- "ments in ornamenting cylindrical and other surfaces of wood "and other material." The invention relates to a machine in which "the dies or plates employed are arranged to rotate "or partially rotate," and the article of wood or other material (a penholder or pencil) "is either held from rotating or "else rotates, and the rotation may be only partial or com- "plete, and varied from time to time as the article proceeds "through the die or plate, by which varied ornamental effects "of embossing may be obtained on the exterior faces." The machine is composed of 1. a "fixed bed plate," in a dovetail groove of which slides freely a "sliding plate" having a toothed rack on its surface, and moved by a cog-wheel and handle; 2. "a template," screwed or bolted to one side of the sliding plate; 3. "a lever," having on it two studs (one on each side of the axis)—these studs being acted on by the template cause the lever to move—4. a "sliding bar in bearings" connected to one end of the lever; 5. a "die or plate" placed in a collar or holder which is fastened to the sliding bar; and 6. in front of the sliding plate "a forcer," made rough at its end to offer friction and thereby prevent the article from "turning as it is driven

" through the die." The ornamentation of the article depends on the die (or dies) used, on the angle at which it is set in the collar, and on the forcer being hollow or not; when it is hollow, the article can turn. Instead of being forced through the die, it " may be drawn through by reducing one end so as to pass it " through the dies, and then by holding such end to draw it " through by suitable apparatus," a method recommended for metal tubes. " The dies or plates may be moved round by cog- " wheels or other convenient means."

Printed, 1*s.* 2*d.* Drawings. See Repertory of Arts, vol. 13 (*enlarged series*), p. 360; London Journal (*Newton's*), vol. 34 (*conjoined series*), p. 252; Mechanics' Magazine, vol. 50, p. 305; Artizan, vol. 7, p. 208; Patent Journal, vol. 7, p. 4.]

A.D. 1848, December 21.—N° 12,383. (* *)

RIDDLE, WILLIAM.—" Improvements in the construction of " ever-pointed pencils, writing and drawing instruments, and in " inkstands or inkholders."

1st. Providing for the use of several leads in one ever-pointed pencil, one after another, without the necessity of removing the point or handling the lead at each renewal. A chamber, connected with a volute and spring, contains the leads; rotating the pencil case brings into use and propels the leads or other marking material.

2nd. Grooving the stem of a wooden ever-pointed pencil, so that a propeller with a helical thread can push the material out of the point.

3rd. The ink is retained in metal pens by means of a shield attached to the pen by a tightly-fitting pin joint, which enables the said shield to be turned back for cleaning.

4th. A strip is advanced or receded from the nibs of gold pens by a screw movement, making them hard or soft.

5th. Applying the principle of the 4th improvement to ordinary penholders.

6th. A strip of metal is slid under certain pins in the inner tube of a Bramah or other penholder, so as to form a cavity in the hollow of the pen, and cause it to take up an extra amount of ink.

7th. Attaching the covers of inkstands, so that the same power which keeps them closed shall hold them open during use.

A helical spring and stud is used in connection with a jointed cover.

8th. Applying perforated metal, wire gauze, horsehair, &c., as a filtering medium to inkholders for the purpose of removing any accumulation of dust or dirt.

9th. Silvering the insides of glass inkstands, so as to resemble mirrors on the outside when filled with ink. A mixture of lunar caustic, spirits of hartshorn, spirits of wine, and oil of cassia, is used for this purpose.

[Printed, 1*s.* Drawings. See Mechanics' Magazine, vol. 50, p. 619; and Patent Journal, vol. 7, p. 137.]

A.D. 1849, April 16.—N° 12,569. (* *)

RUTHVEN, JOHN.—"Improvements in preserving lives and "property from water and fire, and in producing pressure for "various useful purposes."

1. Screw coupling stopcock for press. 2. Stopcock for the nozzle of a fire-engine hose. 3. Pipe and bag for inflating air bags, hats, &c.

4. Hand press for copying letters, letter-press, or woodcut printing, &c. A beam having its fulcrum in standards at the near end of the press brings down a rod attached to it upon the platen. The pressure is given to the near end of the beam by a compound lever worked by the handle which moves in a pivot in the near standards.

[Printed, 6*d.* Drawing. Repertory of Arts, vol. 15 (*enlarged series*), p. 21; Mechanics' Magazine, vol. 51, p. 381; Patent Journal, vol. 8, p. 58.]

A.D. 1849, April 26.—N° 12,587.

ILES, CHARLES.—Improvements in manufacturing inkstands and other articles in dies or moulds. The patentee causes "any "suitable plastic matter or material to be combined with colored "silk waste," or with other colored fibrous matters, or with a "mixture of both," taking care that "the matter employed is to "be of a different color or colors to that of the plastic matter," so that "those portions of the colored fibres which come to the sur-"face may give to the fabricated article a veined or marble "appearance." He prefers for his plastic material "resin, four "parts in weight; wax, one part; glue, six parts; alum, four parts; gypsum, twelve parts;" and, when these are well mixed

together, he stirs in a quantity of fibrous materials, and casts the composition into moulds.

[Printed, *4d.* No Drawings. See Repertory of Arts, vol. 15 (*enlarged series*), p. 24; London Journal (*Newton's*), vol. 36 (*conjoined series*), p. 153; Mechanics' Magazine, vol. 51, p. 429; Patent Journal, vol. 8, p. 70.]

A.D. 1849, June 30.—N° 12,681.

HERTZ, BRAM.—"Improvements in and an addition to fountain "pens." To the lower end of the outer case is fitted a plug, through which a small hole is pierced. The plug may be prolonged a little beyond the case, and the pen nib "made with a "tubular head to fit on to the prolonged part." The reservoir extends to above the middle of the case, and a longitudinal slot reaches therefrom nearly to the top. The movement, which is introduced into the upper part of the case, consists of a piston and a piston rod worked by a screw rod. The piston, of some elastic substance, fits closely to the case; the rod is "composed of "two side pieces" connected at the upper end by a ring, and at the lower end to another ring which encircles the top of the piston. The side pieces and upper ring have on their inner faces screw threads in which the screw rod turns by means of a milled head. On the upper ring is a projecting stop, which taking into the slot prevents the piston from turning. On the neck of the screw rod is a ferrule, turning freely, but "prevented from "moving laterally by small collars on each side;" it has on it a stop which takes into the slot. The movement and case are united by a "locking piece," on the end of which is a tongue, which comes over the upper stop. A washer is interposed between the locking piece and the case. The lower end being immersed and a vacuum formed between the piston and plug, ink will flow into the reservoir. With this pen may be combined an ever-pointed pencil case, which, when not in use, is kept in the interior of the screw rod. A cap is made to fit either end and protect pen or pencil. "To exclude any risk of the ink flowing "out of the pen when not in use," a thin disc of india-rubber, with two or more incisions made through it and crossing each other, "is interposed between the end of the fountain and the "nib holder, which is screwed into it." "A small tap," turned by a head, may be let in between the two for the purpose "of "regulating and stopping off the flow of ink." The nib holder may be made to revolve within the outer case, so that a turn to

one side or other will open or close the ink passage. The reservoir may be charged by the suction of the mouth; two elastic valves, one at the top of the case, the other below the reservoir, are fixed to one rod and kept closed by a helical spring; the valves are opened by pressing down a projecting knob on to the spring. The reservoir may be a glass tube, and the nib holder cemented to the lower end. In the nib holder is a valve "acted upon by a "helical spring and knob." The upper end of the glass tube is covered by a metal head piece, under which is a small hole; by applying the mouth thereto ink may be sucked into the reservoir; or a supply may be poured in through a quill or narrow-mouthed funnel.

[Printed, 8*d*. Drawing. See Mechanics' Magazine, vol. 52, p. 19; Patent Journal, vol. 8, p. 198.]

A.D. 1849, July 4.—N° 12,691. (* *)

THOMSON, ROBERT WILLIAM.—"Improvements in writing "and drawing instruments."

In a pen made wholly of glass, a piece of capillary tube has a bulb blown upon it at one end; the extremity of the bulb is "drawn off into a curved form suitable for the nib," the width of which and the opening therein determine the thickness of the stroke produced by the instrument when in use. The bulb may be filled with ink or colour by the suction of the mouth, or by other means of exhaustion. A short tube, fitting tightly over the stem of the pen by means of a vulcanized india-rubber collar or an india-rubber extension, may be drawn off the stem, causing the rise of the ink when the upper end of the tube is closed. The bulb may fit into the elastic collar of a metal stem by means of a short shank; the pulling up of a piston that fits the hollow stem, fills the bulb; this instrument may have a moveable stem for the pocket.

The points and nibs may be made of precious stones, and cemented to the glass bulbs. Glass and stone nibs may be attached to metal bulbs. "The nibs may be preserved by deposit-"ing on them a coating of metal by the electrotyping process, "and ground into shape with the nib."

Another improvement consists of "an arrangement for giving "elasticity to common metal penholders." In one instance the short tubular holder has a shank inserted into it, and held fast by a *vulcanized india-rubber* collar inserted within the ordinary

holder. In a second instance, a vulcanized caoutchouc plug is fastened into the tube, so that the lower end of the plug is free.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 37 (*conjoined series*), p. 79; Mechanics' Magazine, vol. 52, p. 37; Patent Journal, vol. 8, p. 187.]

A.D. 1849, December 19.—N° 12,905.

THOMSON, FREDERICK HALE, and VARNISH, EDWARD.—Improvements in the manufacture of inkstands and other vessels of glass. The invention "consists of blowing or forming glass "vessels so as to leave hollow spaces between the sides, so that "the effect of silvering will be seen interiorly and exteriorly." "The upper part is blown and shaped double;" the lower part is hollow, and there is a hole left at the bottom, through which the solution of silver is to be poured. The patentees prefer a solution of one ounce of hartshorn or ammonia, two of nitrate of silver, three of water, and three of spirits of wine. These are to be mixed carefully together, allowed to stand three or four hours, and then filtered. To one ounce of the filtered fluid is to be added about a quarter of an ounce "of saccharine matter dissolved in "equal parts (say about half a pint of each) of spirit and water." They prefer "grape sugar so dissolved if the solution is allowed "to stand a few hours." The liquid must "be kept in contact "with the surface of the glass intended to be silvered, the glass "being kept heated to about one hundred and sixty degrees of "Fahrenheit during the process. As soon as the glass is perfectly "dry, it may be varnished with common mastic varnish." After the process of silvering has been performed, the remaining liquid is to be poured out and the opening closed. The interior and exterior parts may be made separate, and the rims fixed together by a metal edge or by other convenient means.

[Printed, 8*d*. Drawings. See Repertory of Arts, vol. 16 (*enlarged series*), p. 143; London Journal (*Newton's*), vol. 37 (*conjoined series*), p. 21; Mechanics' Magazine, vol. 52, p. 518; Patent Journal, vol. 9, p. 167.]

A.D. 1850, January 3.—N° 12,913. (* *)

WATERLOW, ALBERT CRAKELL.—(*A communication.*)—"Improvements in the means and apparatus for obtaining copies "of writings, drawings, and other designs." "The invention "consists of modes of arranging apparatus, by means of which "copies of writings, such as letters and other documents, and "by which also impressions of stone or plate, of drawings or "other designs, in like manner to which lithographic drawings "*and designs* are now produced, may be obtained." A damp

sheet of paper is laid over the subject to be copied, and the copy taken by drawing over it a frame containing a pressing cylinder in spring bearings or a scraper bar. When the subject is paper the damp sheet is covered with a sheet of felt.

A modification of the above, in which the stone or plate is on a bed, which, by means of a rack, is passed between two cylinders.

Arrangement of a very simple nature for obtaining copies according to lithographic or zincographic process is described. An ink box to be used with this machine is shown in the Drawings.

[Printed, 1*s.* 4*d.* Drawings. Repertory of Arts, vol. 16 (*enlarged series*), p. 80; London Journal (*Newton's*), vol. 38 (*conjoined series*), p. 24; Mechanics' Magazine, vol. 53, p. 18; Practical Mechanics' Journal, vol. 3, p. 175; Patent Journal, vol. 9, p. 176.]

A.D. 1850, March 23.—N° 13,021.

NEWTON, ALFRED VINCENT.—(*A communication.*)—"Improve- "ments in the preparation of materials for the production of a "composition or compositions applicable to the manufacture of "buttons, knife and razor handles, inkstands, door knobs, and "other articles where hardness, strength, and durability are "required."

[No Specification enrolled.]

A.D. 1850, April 23.—N° 13,060.

FONTAINEMOREAU, PETER ARMAND LECOMTE DE.—(*A communication from abroad.*)—"Improvements in the manu- "facture of wafers, and in the machinery or apparatus con- "nected therewith." The invention relates to the employment of metallic bands in the manufacture of wafers. "On one "of the jaws of the ordinary iron-mould machines" a metallic slip is laid, over which is spread "a spoonful of flour paste duly "prepared." The mould is then shut and the paste baked. The bands thus coated are cut into the required shape for wafers. All kinds of metals and alloys of metal can be used, and any colour may be applied to the coated bands; but after being colored they are to be "put in the drying room at a temperature of one "hundred and twenty-two degrees Fahrenheit," and left in it to dry "from twenty-four to thirty-six hours, after which they "receive a coating of varnish prepared with alcohol." A second *method is to coat* metallic bands "with paper or very thin tissue "*of any color,*" *united* to them by means of ordinary paste, gela-

tine, arabic, or other gum. "The coating thus obtained is after-"wards gummed underneath by any of the well-known modes." Or metallic bands may be pasted to tissue or paper slips which have been previously bespread with a composition of sealing wax melted at a low temperature, Venetian turpentine, and beeswax in its natural state; the whole is then dried in the open air. They are then coated with a thin layer of "equal parts of copal varnish "and distilled turpentine;" when this mordant begins to dry, there may be spread over them a thin coating of gold, silver, copper, or any metallic amalgam "prepared in a state of fine "powder." The first two kinds of wafers fasten with wetting; the last by being heated and softened. The machine for cutting wafers is made as follows:—A screw, driven by a balance lever and raised by a spiral spring, descends through a frame; attached to the end of the screw is a metallic plate, which at each descent falls very flat on "a group of small frames or boxes without "bottoms," and containing each four punches soldered together and fixed to the sides of the frames. "The group can be formed "of an indefinite number of united frames jointed together by "means of an iron bridle, their bases being set in a mortise or "groove, and being kept in the proper position by means of a "cramp screw on cross pieces forming a grating, having large "openings and screwing as a plate board, on which the bases of "the said frames repose." A drawer to receive the wafers is placed under the grating.

[Printed, 6*d*. Drawing. See London Journal (*Newton's*), vol. 37 (*conjoined series*), p. 314; Mechanics' Magazine, vol. 53, p. 333; Patent Journal, vol. 10, p. 45.]

A.D. 1850, June 24.—N° 13,148.

STEPHENS, HENRY, and WYLDER, EDWYN.—"Improve-"ments in ever-pointed pencils, pens, and penholders." Three modifications of ever-pointed pencils are described, from each of which is propelled a length of lead, chalk, or other marking material nearly equal to that of the case. In the first and third, motion is given from the head; in the second, from the point. Inside a cedar case, "having a cylindrical central aperture "throughout its length, grooved or notched on one side," is a helix, the full length of the case, "its internal dimensions being "exactly that of the cylindrical piece of lead," &c. to be used. If the lead, &c. is of a different form (as in the third modification),

a thin metal tube of the same form, but with one of its sides or angles left open, is introduced into the helix. The lower end of the helix "is filed off in a conical form, so as to constitute a "guiding tube, which enters the point" part (which is made of ivory, metal, or other suitable material). At each end of the helix shoulders are soldered or otherwise affixed, which work in recesses countersunk in corresponding parts of the case; the upper shoulder terminates in a square pin. The propeller is a wire, so bent that one portion of it may move up and down within the helix or tube, while the other slides along the groove. The cap is composed of two concentric tubes or cones; the inner screwed or cemented to the case, the outer (in which is a square hole to receive the square pin) moving freely upon the inner. The lead, &c. is inserted within the tube by taking off the point part. In the second modification, the upper shoulder is made without a square top, and to the lower end of the helix is affixed a socket with a shoulder (both cylindrical) and working "in a corresponding recess" in the case. Below the shoulder "the socket is square, and terminates "in a screw to receive the point." A cylindrical cap screws fast on to the end of the case, securing the helix and its socket in its place. "A circular disc, milled on its outer edge and having a "square hole in its centre, is put on the square end of the socket "and held there by screwing on the point." In the third, the lower shoulder is near the end of the tube, and held there by a cap piece which is screwed on to the end of the case. The tube below the shoulder "is slit open at two or more of its sides, and "has a tendency to expand." The opening through the cap piece "is conical, tapering downwards," so that, when it is screwed on, it may partially close the tube and grasp firmly the material with which the tube is charged. In steel pens the first improvement is the application of gutta percha to the parts between the shoulders and nibs; the pens are made very soft between these parts, and a band of gutta percha is wound round them, and cemented to them by heat. The nibs are manufactured harder than usual. The second improvement consists "in forming "metal barrel pens with the barrel the reverse way," "so as to "receive ink on the back from fountain penholders." "A slip "pen" may be constructed on this plan, and used in a suitably formed holder. The penholders are divided into telescopic and hydrostatic. The former is composed of an inner and an outer *tube; the inner is conical*, open at both ends, the lower end being

of a suitable size to receive an ordinary barrel pen, or one of the above described. Near the upper end is a groove for the reception of an elastic band. The outer tube is cylindrical, closed at the top, and of such a size as to slide freely, but air-tight upon the inner tube. The inner tube may be made " with an enlarged " chamber near its lower end, having an opening on one side." Round this chamber is cemented a band of flexible material which closes the opening water-tight. The inner tube may be fitted air-tight with a cylinder of burnt cork, and the outer one (of metal) with a round top, to which the cylinder " is attached by a wire " and screw nut, its inner extremity being covered with cement " to keep the screw out of contact with the ink." The holder is charged by drawing up the upper tube, and a flow of ink is supplied to the pen by gradually depressing it; and pressure on the opening renders a frequent depressing less necessary. The hydrostatic penholder has an ink tube, the top of which is closed by a screw cap with one or more air holes in it; these may be stopped by a screw plug, a washer being interposed between its shoulder and the cap; " or a sliding regulator may be em- " ployed for this purpose." At the lower end of the tube is a " hollow stem for the reception of a barrel pen, or a barrel " holder for a slip pen," an opening in it being so arranged as to correspond with the slit of the pen. Between the tube and stem, and " communicating with each by two small aper- " tures directly opposite each other," is a passage running crossway, into which a plug of gutta percha or other suitable material fits accurately, " having a deep groove cut round, near " its middle." A spiral spring at one end of the plug keeps the passage closed, and pressure on a projecting stud at the other end opens it. Both plug and spring are enclosed in a cap tube. A few turns of the screw plug admits air; but it may be admitted simultaneously with the flow of ink to the pen by means of a lever pivoted on the outside of the tube, its lower end resting on and moving with the stud, while its upper end " covers and " closes a small opening in the side of the tube." The communication between the tube and stem may be opened and shut by a revolving cock, with a notch in one side and a square projection on either end; over each end " one arm of a saddle spring " is placed, " an elastic washer being interposed to make all tight." The upper end of the spring rests on the tube. Again, the tube may have at its lower end " an internal cylindrical chamber" with

a small opening on one side; this opening is kept closed by the pressure of an india-rubber band on the head of the stem; this band slides within the chamber. The pressure is given by a spiral spring, placed between a screw cap "and a shoulder on the stem." A stud affixed to the stem, and moving up and down in a straight or spiral slot in the cap by being pushed downward causes the band to uncover the opening.

[Printed, 8*d*. Drawing. See Mechanics' Magazine, vol. 53, p. 518; Patent Journal, vol. 10, p. 165.]

A.D. 1850, June 24.—N° 13,151.

MITCHELL, EDWARD.—"Improvements in fastenings for "articles used for writing and drawing and other purposes, and "improvements in articles to be used for writing and drawing." Of the six inventions for fastening a pen in a holder, the first consists in fixing a button on the interior or exterior of the holder, and in cutting a slot in the metal pen, suitable for passing over the head and fitting the stem of the button. Instead of a button, a semicircular elevation may be "punched in the metal of the "holder." The slot may be cut in the holder, and the button fixed on the pen. The second is suitable for "holding different "sizes of pens" in the same holder. The pen is inserted between a lever and the interior surface of the holder. A spiral spring, with a disc at each end, and having its force regulated by an adjusting screw, presses against the tail of the lever and increases the pressure on the pen; the screw passes through a screw nut fixed in the tube. In the third, the pen is made with a button on the top, which passes into a tube "turned inwards at the ends." The button is pressed against in the same manner as the tail of the lever. The turning of the screw is effected by its flat sides passing through the end of a tube which is bent in to receive it. The tubes are united by means of a groove on the inner one, into which the upper end of the outer one is turned. In the fourth, part of a second holder is inserted within the outer one, so that, when the pen is placed in the second one, it may have "an inclined "position." In the fifth, the holder terminates in a hook, which enters a corresponding hole in the pen; within the holder is a spring constantly pressing down a disc, between which and the holder the tail of the pen is held fast. In the sixth, the pen is held by a hook at the end of the holder, and the tail is received *within a projection* inside it. The fastening to the cover of an

inkstand consists of a disc and spring beneath it (both enclosed in a tube) pressing against the tail of the cover; the cover turning on an axis is kept "close shut or open" thereby. A book-clasp is made on a similar principle. The clasp, which is hinged to the flap, has at one end "the ordinary hook formed thereon; "the other end acts as the tail of the lever;" this rests on a disc which is constantly pressed against it by a spring. A paper fastener may be made, consisting of a plate on which stand a tube and an upright for an axis to a lever; the tube contains a spring and sliding piece constantly pressing against the short arm of the lever. The long arm carries a tube inside of which are a pointed wire and a spring; another tube, sliding within the last named one, "covers the pin when there are no papers under it, and its "end is caused to press on the papers" by the spring.

The patentee claims the invention of a pen; it has a slot at the end of the slit; two slits or openings meet together a little above the shoulders, "but do not cut through the edge of the metal "below the shoulders, so that there will be an elasticity" at the parts near the nibs. He describes also a fastening "suitable for "wrist and other bands or other articles."

[Printed, 1*s.* 2*d.* Drawings. See Mechanics' Magazine, vol. 53, p. 518; Patent Journal, vol. 10, p. 166.]

A.D. 1850, November 30.—N° 13,370.

BARBER, RICHARD.—"Improvements in the manufacture of "reels, &c., which improvements are applicable to the manufacture "of desk or wafer seals." "This improvement consists in cast-"ing the stem of the desk or wafer seal in metal, with a groove "or recess at the bottom, in which is inserted a piece of glass or "hoof, with a suitable device thereon, for giving the impression "to sealing wax or wafers."

[Printed, 6*d.* Drawing. See Repertory of Arts, vol. 18 (*enlarged series*), p. 11; Mechanics' Magazine, vol. 54, p. 458; Patent Journal, vol. 11, p. 181.]

A.D. 1851, January 7.—N° 13,441.

BROWN, JOHN HARCOURT.—"Improvements in the manu-"facture of wafers." The ingredients of the adhesive composition are sixteen parts of the best strong glue, four of clean gum arabic, five of treacle or other saccharine matter, three of spirits of wine, one of camphor, one of virgin wax, and twelve of

distilled water. These are to be put into a closed glass or earthen vessel, which is to be immersed "for eight hours in a sand bath "two degrees below boiling heat, after which the composition is "to be strained free from impurities. It is then to be placed again "in a clean glass or earthen vessel, and by the addition of a "solution of alum (one of alum to sixteen of distilled water) "brought to a thin consistency for use by the sand bath at the "same temperature." The method of manufacturing the wafers is as follows:—"Obtain plates of metal, as thin as tissue paper, "or any other substance desired, the thinner the better; cleanse "and color them by the application of acids and other coloring "matters generally used for such purposes, or by gilding, electro-"plating, or bronzing. They are then to be passed through a "pair of rollers, one of which is polished, and the other very finely "cut, so as to impart to one surface a rough face for the recep-"tion of the composition. The cut surface is then to be brushed "over with the thin liquid adhesive composition in a warm state, "avoiding all inequalities, so that the coating appears as if it was "simple water. The plates thus prepared are then laid upon a "drying stove, at ninety-three degrees, until sufficiently hard and "dry; they are then in a condition to be cut and stamped to any "shape, either embossed or plain, by the ordinary machinery used "for cutting and stamping the paper wafers of commerce."

[Printed, 4*d*. No Drawings. See Mechanics' Magazine, vol. 55, p. 59; Patent Journal, vol. 11, p. 194.]

A.D. 1851, January 16.—N° 13,458.

COGAN, ROBERT.—Application of glass to various purposes; amongst them to pens and pencils. The patentee claims "the "application to pens and pencils of a hollow moveable glass case, "which may be made to answer the purpose of a handle," so that they may be carried in the pocket without risk of injury. The case is especially adapted to glass pens, the stem of which should be made much shorter than usual, and inserted into the case when required for use; at other times "the pen can be "reversed and the point inserted." The stem should be ground to fit the handle, and made with a flange or stop to prevent it from being thrust too far in.

[Printed, 8*d*. Drawing. See London Journal (*Newton's*), vol. 41 (*conjoined series*), p. 24; Mechanics' Magazine, vol. 55, p. 77; Patent Journal, vol. 11, *p. 197.*]

A.D. 1851, January 31.—N° 13,484.

GAGE, JEAN PAUL. — "Chemical compounds for various purposes; amongst them for wafers and sealing wax. Copper and zinc, reduced to a powder, are mixed with resins and resinous gums, such as india-rubber, gutta percha, and other similar substances, purified and liquefied by known processes; "from five to "fifteen per cent. in weight of metal raspings" is then added. "The paste thus prepared is passed into the laminating machine "and reduced to the thickness of ordinary wafers." Out of the sheet thus formed are "cut out with a common cutter circular "disks of the dimensions of wafers," which are used "by heating "the surface to be applied on the paper." The pressure of a seal on the heated wafer causes the metal raspings to penetrate the paper and "form a cramp." A new kind of sealing wax may be obtained from this paste "by making it into rolls or sticks."

[Printed, 4*d*. No Drawings. See Mechanics' Magazine, vol. 54, p. 459; Patent Journal, vol. 11, p. 174.]

A.D. 1851, March 4.—N° 13,542. (* *)

NEWTON, ALFRED VINCENT.—(*A communication from C. Goodyear.*)—"Improvements in the preparation of materials for the "production of a composition or compositions applicable to the "manufacture of buttons, knife and razor handles, inkstands, "door knobs, and other articles where hardness, strength, and "durability are required." First, treating caoutchouc or gutta percha, or caoutchouc and gutta percha combined, by mixing them with sulphur and heating them to a high temperature, or mixing them with sulphur and other substances and heating them. The other substances mentioned are magnesia, lime, or the carbonates or sulphates of magnesia or lime, or "calcined "French chalk or other magnesian earth," "gum lac or "shellac," "rosin, oxides or salts of lead or zinc of all colors, "and other similar substances, both mineral and vegetable, may "be added in small quantities to either of the compounds." These compounds are mixed by a masticating machine, and rolled into sheets and manufactured into the articles desired. "The compounds or compositions after heating or curing will "attain a hard and stiff character resembling tortoise shell, horne, "bone, ivory, or jet."

Second, applying these compositions when hardened by heating,

or before heating by moulding, shaping, and afterwards heating, also uniting them to iron or other metals, &c., which will bear heat, and afterwards heating.

[Printed, *4d.* No Drawings. See London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 9; Mechanics' Magazine, vol. 55, p. 219; and Patent Journal, vol. 11, p. 276.]

A.D. 1851, July 7.—N° 13,688.

BAILDON, HENRY CRAVEN. — "Improvements in writing, "printing, or marking letters, characters, or figures upon paper, "parchment, or other material properly prepared for that pur- "pose." The object of the invention is the prevention of fraudulent alterations in any written or printed document, and this is effected by "the employment of colored paper, parchment, "or other proper material," and "a chemical fluid or mixture of "such a nature as will discharge or change the color of those "parts of the paper or other material" which are written or printed on, and cause the letters to be white or of a color different from the material. For coloring the material the patentee prefers to use "such a color or combination of colors as can be discharged "or changed to some other color by the chemical action of caustic "or partially caustic potash or soda," and for the writing fluid, "a solution or mixture of or containing such alkali." He prefers "to employ a compound color, such as purple or green;" a purple formed of Prussian blue and a mineral, animal, or vegetable red, and a green made up of Prussian blue and chromate of lead. To prevent "any attempt at restoring any discharged or altered "color by chemical means" one portion of the document may be written with ordinary ink and another "with potash or other "fluid," so that "the immersion of the paper into any chemical "solution may have the effect of causing the common ink to run "or be discharged, or to be altered in its color." Other solutions may be employed, "provided that in all cases the paper is a "colored paper, and the ink or writing fluid is of such a nature "as to change or discharge the color of the paper."

[Printed, *4d.* No Drawings. See Mechanics' Magazine, vol. 56, p. 59.]

A.D. 1852, April 29.—N° 14,098. (* *)

HINKS, JOHN, and NICOLLE, EUGENE. — "A new or im- "proved composition, or new or improved compositions, and "*machinery for pressing* or moulding the same, which machinery

" is also applicable to moulding or pressing other substances." First, the new compositions consist of mixtures of gutta percha with either farinaceous matters or with woody fibre, or both. The farinaceous matters preferred may consist of wheat and barley flour, or potatoe, wheat, or other starch; and the woody matters preferred are hemp or flax, cut short. The mixture is preferred to be made in certain proportions with heated rollers, and the sheets cut into pieces of a suitable size, especially for manufacturing boxes for packing steel pens or other small articles, &c.

Second, "constructing a machine for pressing or moulding" these compositions and plastic substances generally. The machine consists of an arrangement which is described; and a cake or sheet of the plastic substance to be pressed or moulded, first warmed, is placed upon a die fixed upon the top of a plunger, whilst, by the rotation of an axis, another plunger or die is made to descend upon it, and forces a portion of the plastic material between the first die and plunger, thus forming the article according to the die.

[Printed, 8*d*. Drawing. See Mechanics' Magazine, vol. 57, p. 395.]

A.D. 1852, June 12,—N° 14,165. (* *)

DIXON, EDWYN JOHN JEFFREY, and DODSON, ARTHUR JOHN.—" Improvements in machinery and apparatus used in " quarrying slate and stone, and in cutting, dressing, planing, " framing, and otherwise working and treating slate and stone, " and in apparatus and waggons used for moving and conveying " slate and stone, and improvements in joining, framing, and " connecting slate and stone."

The latter part of this Specification describes a method of applying " gutta percha " or " india-rubber, or other substances com- " bined with either or both of these, to the making of frames for " writing or school slates, pressed while in a plastic state into " moulds with any pattern, device, letters, or figures, that the " counterpart may be impressed upon the frames. To place the " slate in these frames, prevent the joining of one corner while in " the mould by a fillet in the mitre, and afterwards unite the joint " by heat." " And applying gutta percha, or india-rubber, or " leather, or other suitable substances in connexion with wood in " the formation of the framing for writing or school slates." Instead of making mortices in two of the pieces and tenons in the others of the four pieces which compose the frame, make open

mortices in all the four pieces intended for the frame. "Into "two of these pieces glue or otherwise fasten small pieces of "gutta percha, india-rubber, or other suitable substances to form "what in carpentry is termed 'a false tenon;' these again fit into "the mortices in the other two pieces of timber for the framing, "and the frame is fastened by metallic or other pins in the corners. "In 'mitreing' slate frames (instead of mortice and tenon) use "the same materials for the 'tongue' as for the 'false tenon,' "and cap the corners of the frames with an angular capsule or "clamp of gutta percha or india-rubber, or other proper substance "or substances set on with cement."

[Printed, *4s. 6d.* See Mechanics' Magazine, vol. 57, p. 516.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 1.—N° 30. (* *)

POOLE, Moses.—(*A communication from Mr. Goodyear.*)—"Improvements in the manufacture of trunks, cartouch and other "boxes, knapsacks, pistol-holsters, dressing, writing and other "cases, and sword and other sheaths;" and these are, employing in manufacturing the above articles, "a material not hitherto "used in such manufactures, and which is a hard substance, pro-"duced by combining india-rubber with sulphur, with or without "other materials, and subjecting the same to heat after it has "been made into the desired articles," "the compound to be used "being rolled into sheets;" the sheets are "formed into the "articles above mentioned, by spreading" them "upon forms or "in moulds, according to the shape and nature of the article, "more particularly where the article is to be wholly of the com-"position. Wood or sheet metal is considered best for forms, "and solid metal is considered best for moulds," "to keep the "covering in contact with the form, and to facilitate the heating, "the articles are placed in cases or frames, and surrounded with "*impalpable powder* of talc or soap-stone; when the sheets are in

" the interior of a mould or shape sand is placed in the interior," and heat is applied gradually to 230° of Fahrenheit and subsequently to be raised up to from 295° to 305°.

[Printed, 4*d*. No Drawings.]

A.D. 1852, October 1.—N° 47.

PERRY, STEPHEN.—"Improvements in inkstands or inkholders." The patentee claims the invention, first, of " combining a flexible " or partly flexible ink vessel with a dipping cup and tube passing " from above towards the bottom;" secondly, of " the combining " of pumping apparatus with a stopper of ink vessels." The ink vessel, of any flexible substance (gutta percha is preferable) and of any shape, is placed in a stand of wood or any other material. In the bottom of the vessel is formed or fixed a hollow screw " with passages for the ink to flow through;" on the top stands a projecting head containing a dipping cup, to which is attached a tube with a screw formed on its lower end. This screw fits into the hollow screw, and by turning the head the screw descends, the top and bottom of the vessel are drawn towards each other, and ink flows into the cup. When the tube is unscrewed, the vessel will expand, and air will pass down the tube and rise into the upper part of the vessel. The vessel and tube may be made without a screw. " In this arrangement the bottom is acted on " by a lever, which is pressed on by a screw " in the stand on one side of the vessel. The pumping apparatus, consisting of a disc of vulcanized india-rubber, " fixed at its edges," and " deflected " by a screw or otherwise," is placed in the upper part of the stopper, " which is to fit air-tight." The vessel is " an ordinary " ink vessel," and the dipping cup with its tube passes through the top by the side of the stopper.

[Printed, 6*d*. Drawing.]

A.D. 1852, October 1.—N° 73.

WILKINS, EDWARD.—" Improvements in ruling and folding " the leaves of account books, or other books used for mercantile " purposes, and in making entries therein, and delivering vouchers " therefrom with accuracy and dispatch." The patentee thus describes his invention :—" I form such a book by stitching sheets " of paper in the middle, as in the usual mode of making account " books. I then fold over one half of each leaf (or half sheet) on " to the other half, and I have the paper so ruled that the lines

"on the upper fold (or quarter sheet) shall correspond with the "lines on the under fold (or quarter sheet)." "I then place a "piece of carbonic or other marking paper between the folds, "and provide a thin metallic or other hard plate to place under "the lower fold, in order to make a clear impression." "If the "book be made of ordinary paper, the entries must be written "with a pencil, but if made with prepared paper, a blunt point "may be used." A voucher is given by tearing off the portion of the upper fold on which the items are written, and "a perfect "fac-simile" will be left in a complete book for the use of the vendor. The same object may be effected by placing under a leaf of an ordinary account book a thin plate (as before described) and upon the leaf a billhead or similar document with a piece of marking paper between them. A fac-simile of any items written on the billhead will be found on the leaf of the account book.

[Printed, 1*s*. Specimen annexed.]

A.D. 1852, October 1.—N° 107.

HURRY, HENRY COLUMBUS.—"An improved construction of "fountain pen or reservoir penholder." The inventor claims to construct penholders, "having a valve of such a form that when "out of use the reservoir may be closed perfectly air-tight to "prevent evaporation, and that when opened for use the act of "moving the valve must break or remove any incrustation which "may have taken place between the orifice and the pen or nib." On the top of a tubular reservoir is "a screw or other tight cap," and "a continuation tube" is screwed into its lower end. On the tube is a shoulder, and at the lower extremity a "small metal "conductor," which "may either be formed out of the solid "metal or be fitted into an appropriate groove in the tube, but "must in every case reach the pen or nib." Immediately under this conductor "the tube is cupped out to form a valve-seat." A sheath works freely along the tube, but is prevented from turning round by the tube being made square on the outside, or in any other convenient manner. At the lower end of the sheath is fixed a plug or valve, fitting air-tight into the valve-seat, and having a conductor similar to the one before described; at the upper end is a screw working in the screw of a swivel nut, which is retained in its place by the shoulder on the continuation tube. "Upon "*any convenient part of* the sheath is fixed a clip" of suitable

form for carrying a pen or nib. An outer case may be dispensed with, if "the penholder is not intended for pocket use." In another arrangement, intended for a "desk or table penholder," the reservoir is made smaller at the lower end to allow the clip to be put round it "without rendering it too cumbrous;" its extremity "is contracted to a convenient size for a valve-seat;" a cap is screwed to its upper end, "and in its length are two guides," through which a tube or rod passes, but is prevented from turning round by being made square. If a tube be used, "it is perforated "at intervals" so as to form a portion of the reservoir. To one end of the rod is fixed a plug or valve fitting air-tight into the valve-seat; at the other end is a screw which fits a small screw tube in the cap. "This screw is of a double (or any other con- "venient varied) pitch" to that on the reservoir, so as to open or close both reservoir and valve by unscrewing or screwing up the cap. For charging the reservoir a funnel is introduced into the upper end, and a cap is placed on the lower end to support the valve and prevent the escape of the ink; the top cap must be screwed on before the lower one is removed. In another description of cap, the upper end of the screw tube "passes through "the top of the cap, and is formed into a valve or conical plug, "having beyond a head with rough edge, by which it may be "turned in the inside of the cap; and upon the screw tube is "fixed a collar closely fitting against the top of the cap." In this arrangement the valve is worked independently of the cap.

[Printed, 8*d*. Drawings.]

A.D. 1852, October 13.—N° 370.

PINKNEY, ROBERT. — "Improvements in cases for holding "marking materials." The advantages, which the patentee claims for his invention, are length of marking lead and simplicity of parts. The holder is composed of an outer case, a cap piece, a short screw, a driver, an internal tube, and a point carrier. The outer case is a plain cylinder of wood, ivory, metal, or other material; "it has an internal screw thread or groove cut upon it "from end to end." To this screw thread is fitted "a very short "screw of metal or other material," bored through the centre so that the internal tube may pass through it. This tube, which receives the lead, and which "may be made square or polygonal "for the reception of crayons," &c. has a longitudinal slot from end to end; it is connected at one end to the cap piece, "turned

" down at its inner end, and inserted with a little stiff friction " into a short bored out socket in the upper end of the holder;" the other end of it "is capable of revolving in a small bored socket " inserted in the end of the outer case, and screwed externally to " receive the separate point carrier." The short screw is put into connection with the tube by means of a wire forming the driver, which is fast in the screw and enters the slot. To charge the tube the point carrier must be unscrewed. The lead is thrust forward by turning round the cap and with it the tube; and as the driver passes through the slot, it must necessarily cause the short screw to revolve.

[Printed, 6*d*. Drawing.]

A.D. 1852, October 19.—N° 435.

GOODMAN, JOHN.—"An improved fountain pen," which is made up of the following parts:—a cylindrical reservoir; a ferrule provided with a seal or stamp; a piston; a screw extending the entire length of the reservoir; a revolving tube "furnished at or " near its centre" with a milled boss; and a small cylinder provided with either a fixed pen or a socket for holding a nib, and having near its upper end a milled boss, and at its lower end a bent tube for supplying ink to the pen. The piston " is packed " both inside and outside, and through a tapped orifice, in the " centre of which the screw passes." "Owing to the greater " amount of friction upon the outside of the piston than upon " the inside thereof, the piston will have no tendency to turn " with the screw." The upper end of the screw is attached to a " thimble or ferrule fitted into the reservoir;" the lower end is squared and passes into the squared top of the revolving tube, the two being united by a cap which is secured by a nut. The lower part of the tube " is formed solid (the orifice for the ink " being at the side)." There are diagonal holes or openings drilled through " the cap and the tube, forming a communica- " tion" with the reservoir. The small cylinder " is attached by " means of a left hand screw to the lower end of the tube." The ferrule is to be taken off from the top of the reservoir and " placed " upon the other end of the pen when carried in the pocket, or " otherwise not in use." To charge the reservoir, the ferrule and thimble must be removed, and the piston screwed by means of the *boss on the tube* to the upper extremity of the screw. To supply

ink to the pen, "the screw must be turned to the right, which will "bring down the piston;" to stop the flow, the cylinder must be turned to the left. "The cylinder is connected to the tube by "a pin and slot, in such a manner as only to allow of its turning "upon the said tube to the right a sufficient distance" to open the orifice, "so that upon still turning it in the same direction it "will turn the screw and bring down a fresh supply of ink."

[Printed, 6*d*. Drawing.]

A.D. 1852, October 26.—N° 520.

MARION, CLAUDE MAMÈS AUGUSTIN.—"A new kind of "damper for moistening stamps and paper," which "can be "applied to hydraulic inkstands" or used separately. It consists of a cylinder and reservoir. The cylinder, of porcelain or any other substance, is "terminated at its upper part by a portion "having the form of a half sphere;" it is filled "with sponge, "cloth, or any other fibrous material, and covered at its upper "part with a piece of cloth," the edges of which are fixed by a metal ring; its lower part is pierced with small holes. The reservoir, in which the cylinder is placed, ascends and descends (when inside an inkstand) by working on a large, round, hollow screw, which is joined to the lid by two collars, one above and one below it. The hemispherical part of the cylinder rests on the upper collar, and serves to make the hollow screw turn; for this purpose two stops, entering into notches made in the screw, are placed just above the cylindrical part; or the stops may be in the former and the notches in the latter. When the damper is not placed within an inkstand, it consists merely of a cylinder, as before described, standing in a reservoir of porcelain, metal, or any other material, and of any shape. For moistening copying paper, "the "damper has only to be withdrawn from the vessel in which it "dips, and made use of as a tampion." To avoid wetting the fingers, the tampion, *i. e.*, the upper part of the cylinder, may be made separate and rest on the lower part which in this arrangement is fixed to the bottom of the reservoir. Each part being filled with sponge, &c., the interior only of the tampion will come into contact with the water. Again, the lower part of the cylinder may be enlarged so as to serve for a reservoir, or the lower sponge may be removable for filling with water; or it may be attached to the tampion and raised with it, "when it is necessary to place "water in the vessel. The water which flows from the tampion

" may return into the vessel by the little holes made upon the " lid."

[Printed, 8*d*. Drawings.]

A.D. 1852, October 26.—N° 525.

MYERS, MYER, MYERS, MAURICE, and HILL, WILLIAM.—" Improvements in pens and penholders." The patentees claim eight inventions; three relating to pens, one to penholders, and four to pens and holders. The first method of making pens is to cut out from the blank a part which is bent down to form the nibs, " thus placing the elasticity at the shoulders." In the second method a series of cuts " of a curvilinear or pointed form " are made in the blank in the direction of the top of the pen, " which are then bent downwards, lapping one over the other." In the patentees' words:—" By these means we equalize and " distribute the elasticity of the pen, and regulate the flow of " the ink." In the third method the pen is flattened " trans- " versely between the nib and the pierce, the curve being either " thrown outwards " or inwards; " thus increasing the elasticity " near the point." The invention in penholders is in making them capable of " holding any size or shape pen in general use," and such that the pen can be easily removed from them. This is effected by making the holder of two tubes, part of the inner one forming a spring, " which will readily yield for the receiving or " withdrawing the pen." Or the spring may be made a separate piece, variously shaped, and fastened to the inner tube in different ways. In one modification a small piece of india-rubber is placed between the parts of the spring. In another modification the spring is applied to a quill holder and held fast by the ends of a strip of metal which surrounds the quill; the ends are passed through a hole in the quill and spring, and bent in opposite directions. The first invention in pens and holders consists in so combining them " that the pen may be more readily connected and discon- " nected," and " the elasticity increased or diminished at " pleasure." The holder is composed of two tubes; the inner one is slotted near the lower end, the outer one moves up and down, but is prevented from turning on the inner one by means of a part cut out from it and turned inwards, which works in the slot. The pen is attached to the inner tube by passing its head through a hole or transverse slot therein; the *outer tube is brought* down on the pen, and the elasticity regulated

by the degree of pressure used. The second consists "in so "forming a pen and penholder, that the pen may either be held "straight or in a laterally oblique direction." The pen is attached to the inner tube by a pin which works in a slot. The pen may be so shaped as to avoid the necessity of a pin. The outer tube, which fits the inner one moderately tight, has a small part at the lower end "bent inwards, so that it may come into contact with "a corresponding part of the pen." When the outer tube is pushed down, the pen will be thrown into an oblique direction. The third invention "relates to the making of pens or nibs to be "applied to quill holders," and to shaping quills at the end, so that they may hold the pens in general use. The upper end of the pen is made with a bent spring, and near the end of the spring a part projects cut out of the back. The quill is cut slanting at the lower end, and passed over the spring and into the aperture in the back. To hold ordinary pens, the slanting part of the quill is furnished with a transverse metal band. The fourth "relates to the colouring and protecting from oxidation of pens "and penholders. This is effected by coating or covering them "with copper, by any process whereby copper may be deposited "on iron and steel."

[Printed, 6*d*. Drawing.]

A.D. 1852, October 27.—N° 537. (* *)

BERTOLACCI, WILLIAM ROBERT.—"An improved pneumatic "ink and pen-holder;" by which "a flux and reflux of the ink "from the reservoir to the pen, instead of having a continual "flow," is obtained. It consists of a tube or reservoir, in which is inserted a tube of vulcanized india rubber, if anything larger than the reservoir. The pen is inserted between these two tubes. The ink is made to egress underneath the pen; a pressure knob passing through the reservoir presses against the india rubber tube. In the upper part of the tube or reservoir is a piston, an arrangement of rings, knobs, and india rubber, which is moved up and down by a tube, turning round with a screw, moving in the screw of the piston rod. "In order to fill the reservoir with ink" place the lower end, or pen end, in a vase containing ink, and "turn the tube "backwards, so as to effect the ascent of the piston." When the pen is required for writing screw the tube in the opposite direction, until the ink is just perceived to enter the pen, and press the knob

with the thumb to fill the pen, after which raise the thumb. "The "caoutchouc, by its elastic property, will repel the knob, and "resuming its cylindrical form, and its former capacity, will suck "the ink up again, leaving the inner surface of the pen mois-"tened." The pen is replenished by touching the knob. To render the penholder safe for carrying in the pocket a cap is to be applied, after the ink has been sucked back into the reservoir. This cap confines the knob, and so closes the passage of the ink.

[Printed, 8*d*. Drawings.]

A.D. 1852, November 6.—N° 667.

DE LA RUE, William Frederick, and WATERSTON, George.—"Improvements in writing cases." The invention applies to those writing cases "which are made to fold in the "manner of a pocket book or portfolio, and wherein there are "formed several pockets or compartments;" and its object is so to construct them that they may hold larger papers and blotting books "than what is equal to half the size of the case when opened "out." The patentees carry out their invention by making the folding covers and back of the writing cases (or part only) double; "using the space between as a pocket or receptacle for a blotting "book, or for the largest class of writing paper that the writing "case is intended to carry, and which blotting book and larger "size of writing paper will be folded in the act of folding the "writing case, but such folding of the paper or the blotting book "will not be a sharp bend," so as to injure either.

[Printed, 4*d*. No Drawings.]

A.D. 1852, November 26.—N° 879.

OUDART, Jean Ambroise.—(*Provisional protection only.*)—"Improvements in presses for obtaining copies of letters and other "like purposes." The "press consists of a foundation plate and "standard rising from one end thereof. An arch-shaped lever "is hinged to this standard and extends over the length of the "press. To the other end of the lever a rack is hinged and "hangs from it; a small pinion takes into the rack and is actuated "by a hand lever; a ratchet, into which a pall connected to the "hand lever takes, retains the lever at any required degree of "*pressure. The centre* of the arch-shaped lever is hollowed out

" for the reception of a nut, which is so fitted therein as to allow " it to play laterally. One end of a screw takes into this nut and " carries at the other end the top plate of the press. The screw " is moved up or down, so as to bring the top plate nearer to or " further from the foundation plate, as required, by a hand wheel " or other convenient means. The top plate is caused to descend " and exerts pressure by depressing the hand lever."

[Printed, 4*d*. No Drawings.]

A.D. 1852, November 29.—N° 904. (* *)

NICOLLE, EUGENE.—(*Provisional protection only.*)—" Improve- " ments in apparatus for damping, cutting, and attaching stamps " and labels." " The stamps are shifted forward, which are sup- " plied in a continuous strip of one stamp in width, through " proper guides, to the cutter, the action of which is given from " a cam or lever on the main shaft. One stamp being cut off is " received in a small chamber of rather larger area than the stamp, " which chamber has a piston working upwards by another cam " or lever on the main shaft. The letter or paper having been first " passed between a spring and roller, the latter being partially " immersed in a reservoir of water, or gum and water, fixed on " the top of the apparatus, is then passed over the stamp or label, " and its position regulated by proper guides. On turning the " crank, the piston brings up the label or stamp already cut off, " and attaches it to the damped paper or letter."

[Printed, 4*d*. No Drawings.]

A.D. 1852, December 14.—N° 1058. (* *)

APPEL, RUDOLPH.—" Improvements in anastatic printing and " in producing copies of drawings, writings, and printed im- " pressions."

These consist, 1, in bringing the polished surface of the zinc or other metallic surface used for transfer into a state better adapted for the process, by subjecting it to the action of hydrochloric, nitric, sulphuric, " and even other acids," in vapour or liquid form.

2. In damping the back of prints, &c. sought to be transferred by means of blotting paper saturated with dilute nitric acid, and transferring them when so damped by passing them with the plate

through a roller-press. By this means the finest lines of the print are preserved.

3. "Appelotype," or producing on the plate after removal from the transfer press the finest as well as the darkest shades. For drawings with graduated tints, the paper should be prepared with a strong solution of gelatine and a weak solution of animal gall, and the design executed in lithographic or similar ink, the plate washed successively with a decoction of oak bark water, gum water, sweet oil containing turpentine, and gum water. It is then charged with a soft lithographic roller, and printed from as in lithographic printing.

4. Where the ink is too dry to set off,* the paper is subjected to a hot solution of strontia, or other alkaline earths, or certain salts of the alkalis which have an alkaline reaction, until it will set off slightly. It is then placed between sheets of bibulous paper in dilute nitric acid until the strontia is dissolved, when it is dried. It is then put upon the plate, and transferred in the usual way.

5. Adding to the ink of a design not made in transferable ink, so that it can be transferred to the plate, and will then, as it is technically called, "charge up." The paper is damped and placed face downwards on waxed or greased paper, a sheet of paper is laid over it, and the whole subjected to hot pressure. "The wax "or grease will be drawn up to and combine with the ink, but "will not adhere to the paper. The design can then be trans- "ferred" in the usual way.

The above process is stated not to be applicable in the case of "a certain paper patenteed by Messrs. Glynn and Appel," No. 13,717, as from such paper "it is impossible to obtain a "transfer."

[Printed, 4*d*. No Drawings.]

A.D. 1852, December 24.—N° 1153.

HINKS, JOHN, and WELLS, GEORGE.—"A new or improved "penholder." "Our invention consists in applying to any suit- "ably constructed penholder a discharger for removing the pen "from the holder, which said discharger we construct as follows:—"

* In "The Jewel House of Art and Nature," A.D. 1595, § 40, is described a method "How to renue old letters that be almost worn out of date" by rubbing them over carefully with gall water, "for that will strike a fresh hew again *unto the old and* worn out coppress."

"We slide a short tube upon the holder; a pin, or stud, or pro-
" jection on the interior of the said tube passes through a slot in
" that part of the holder in which the pen is placed; by sliding
" the said tube down the said holder (that is to say, towards the
" point of the pen) the said pin, stud, or projection pushes the
" pen before it and projects it from the holder." The projection is made by partially cutting out a small piece of the metal of the short tube and bending it "into a plane perpendicular" to the tube. For the sake of symmetry there are two openings on the tube and two slots in the holder. There may be two projections, but one "answers perfectly well." In a modification of the above, the holder is composed of two concentric tubes, and the pen is held between them. The inner tube slides within the outer by means of a ring, as in an ordinary pencil case. On the convex side of the inner tube are two projections made by pressure on the interior so as to raise the metal. The top of the pen cannot pass these projections. The lower end of the inner tube is divided into two parts by a longitudinal slot, and the parts are bent into such a shape that, when the tube is slided down, they expand and detach the pen.

[Printed, 6*d*. Drawing.]

1853.

A.D. 1853, January 10.—N° 62. (* *)

DUNCAN, CHARLES STEWART.—" Improvements in rendering
" bottles, jars, and other like receptacles air and water-tight, and
" for raising and measuring the liquid contents thereof," " upon
" the principle of hydro-pneumatics in combination with mechani-
" cal arrangements." These arrangements are applicable to ink-stands. The body of the vessel " has a metal collar cemented to
" the neck." " This collar has a square threaded screw formed
" around it " for the purpose of connecting thereon a cover
" which has a corresponding thread or screw formed therein, and
" there is a piece fixed to or formed upon the said cover, around
" which a ring or collar " " of gutta percha, caoutchouc, or cork,
" &c., is placed and securely affixed thereto," the said collar being in fact the stopper of the bottle. " There is a screwed

" hole formed through the cover " into which " a fountain " resembling in shape a thistle funnel is screwed. To the bottom of this fountain a piece " of cork, gutta percha, caoutchouc, or " other suitable elastic material or composition is fixed ; " an elongation as it were to the fountain. If the cover be unscrewed, then the space between the under side of the said cover and the surface of the liquid will be enclosed, and thereby cause a partial vacuum in the vessel, and the air will pass down the fountain and through the liquid into the space above the liquid, and on screwing the cover again the liquid will be pressed up the fountain. Should the quantity of liquid raised be more than is required, " the surplus may be returned into the bottle by partially " unscrewing the fountain." Modifications also of the above are described.

[Printed, 1*s*. Drawings.]

A.D. 1853, January 15.—N° 105.

TASKER, EDWARD.—" An instrument called the writing and " drawing tube." " The object of this invention is the con- " struction of an instrument capable of holding lead or other " marking substances, from end to end, except about one quarter " of an inch." A slip or ribbon of metal, " by bringing the two " edges nearly into contact," is formed into a tube having a slot or opening throughout its length. One end of the tube is tapered, so as to make the aperture of the size of the marking substance employed. Within the tube is " an embolus," connected with a stud on the outside by means of a thin piece of metal just capable of sliding along the slot. The edges of the tube press against the connecting piece with " sufficient force to prevent its " sliding back in the act of using the instrument," but allow it to be moved to and fro by the finger. " The lead or other mark- " ing substance being placed in the tube, the embolus is inserted " in the rear ; " and by pushing it forward, the lead is propelled through the aperture at the tapered end.

[Printed, 4*d*. No Drawings.]

A.D. 1853, January 15.—N° 108.

HALKETT, PETER ALEXANDER.—(*Letters Patent void for want of Final Specification.*)—" An improved construction of inkstand." " *The object* of this invention is to preserve writing fluids

" when contained in inkstands in their normal state. This I " effect by stoppering inkstands in such a manner, that while the " evaporation of the fluid will be prevented, the constant incon- " venience experienced with stoppered inkstands, arising from " the adherence of the stopper to the neck of the ink vessel " (owing to the glutinous accumulations within the neck) will be " avoided. To this end I fit a cap upon the neck of the inkstand, " after the manner of the cap of spirit lamps, and make the " mouth of the inkstand of the form of a hollow inverted " truncated cone, whereby the pen is guided to the ink. Within " this cone I fit, if thought desirable (as will be the case when " the inkstand is to be moved from place to place), a stopper " which will retain the ink in its reservoir."

[Printed, 4*d*. No Drawings.]

A.D. 1853, January 28.—N° 213.

LUCAS, ALFRED.—(*Provisional protection only.*)—" An improved " inkstand." The principle of the invention consists in the " combination of three or more receptacles for ink in one stand " or bottle." The inkstand, which the patentee designates the " Tria juncta in uno," is divided into three compartments, " and " commonly would be colored, so as clearly to indicate which " division contains black, blue, or red ink." It is constructed " on what is known as the fountain principle." On the top " is " a kind of rack divided into three parts, so that pens may be " placed thereon without being mixed." The patentee reserves a right to vary the details, " as for instance, four divisions may be " used instead of three."

[Printed, 6*d*. Drawing.]

A.D. 1853, January 29.—N° 242.

TWIGG, GEORGE, and SILVESTER, ARTHUR LUCAS.—(*Partly a communication.*)—" Improvements in apparatus for " cutting and affixing stamps and labels." An oblong box containing the greater part of the mechanism is screwed to a stand. A bracket for the purpose of supporting a bolster, and a plate having a flange " on each side projecting into and fitting the " inside of the box," are firmly secured to the sides of the box. A horizontal shaft, mounted in bearings and receiving motion from a handle, has fixed on it two levers, one of which acts on the under

side of a sliding block working vertically in a box fastened to the plate. To one side of this block is attached a steel cutter, the cutting side working against a steel plate and kept in close contact by a spring fastened to the box and pressing the side of the block. In the steel plate is a slot, the upper edge of which acts as a cutter in connexion with the steel cutter. A vertical sliding piece works in a slotted plate secured to the end of the plate, the slot being wide enough to allow a stamp to pass easily through; it is actuated by a spring attached to the under side of the plate, the spring acting on a stud fixed in the sliding piece. On the plate near the back end is "a carriage for feeding the machine with "continuous strips of postage stamps or labels which have been "previously cut to the width of one stamp or label." The under part of this carriage fits easily and slides in a slot formed in the plate. The other parts of the mechanism will be more readily explained by describing the working of the apparatus. The end of a strip of stamps being placed on the carriage underneath a spring thereon, the handle is raised and the shaft makes a partial revolution; this moves a cam fixed on the shaft and brings the cavity of the cam immediately under the sliding piece which descends. A stud on one of the levers comes into contact with "a shaped piece" underneath the block, causing it to descend. The parts of the machine are so adjusted that, when the block has descended, the other lever rises and comes into contact with a spring (secured to the under side of the plate) which acts as a stop to a bracket under the carriage. The lever presses the spring and allows the carriage to be pushed forward by a bent spring (one end of which is screwed to the back of the box, the other presses against the bracket) to the vertical sliding piece, where its progress is arrested by a stop on the top of the plate. The strip of stamps is thus carried through the steel or cutting plate to the proper distance to be cut off, the spring on the carriage preventing the strip from shifting. The handle is now pressed downwards, reversing the motion of the shaft, the cam raises the sliding piece, thereby fastening the strip between it and the slotted plate; the first lever raises the block, and one stamp is cut off. At the same time the other lever liberates the spring, and a curved arm fixed to the first lever presses the bracket and forces the carriage back to its original place, where it is retained *by the spring* on it. The carriage always travels the precise *length of the stamp*; it is, however, provided with an adjusting

screw. Attached to the box is a reservoir, in which is "a roller "covered with flannel or some soft absorbent material," revolving on a spindle and partially immersed in water. The letter, "having been passed over the top of this roller, is pressed "slightly on it" by a spring on the top side of the reservoir; the damped part is then placed between the bolster and the block, with its face to the latter, and the stamp, cut off by the already described operation of the machine, is brought up by the block and affixed. In a modification of this invention "the operations "are performed by the worm on the main shaft, and by crank instead of lever." On the main shaft is "a worm-formed lever, "something similar to a screw fan." As the shaft revolves by the motion of the crank handle, the worm acts on a stud fixed on the under side of the feeding carriage, pressing it forward. The carriage returns by means of a spring, and the block is brought down by a spring working on a stud fixed in the block. Above the bolster is placed "a spiral spring, allowing a slight resiliency" to it, and thereby regulating the pressure.

[Printed, 1s. Drawings.]

A.D. 1853, February 1.—Nº 277.

LEVESLEY, WILLIAM.—(*Provisional protection only.*)—"Im- "provements in the construction of pencil cases." "The object "of this invention is to produce a pencil holder which shall have "no lateral slit or opening, like those now in use, wherein dust "and dirt may harbour." A slotted tube, which is intended to receive the lead or other marking substance, is inserted into a cylindrical or other suitably shaped case. In this tube is placed a short propelling wire, having a pin which projects through the slot "for the purpose of taking into a stationary helical worm," which surrounds the tube. One extremity of this tube is secured to the head, and the other to the point of the case. "The pro- "pelling wire being in the rear of the lead or other marking "material, it is only necessary to turn the head of the pencil "case, and the lead will be protruded at the other extremity." A modification of this invention is, cutting a thread upon the tube, "and causing a nut (which is embraced by two pins on the pro- "pelling wire) to work thereon." The nut, by working in a straight groove in the case, will, as the tube rotates, force the propelling wire forward."

[Printed, 4d. No Drawings.]

A.D. 1853, February 16.—N° 404.

SKERTCHLY, JOSEPH.—"Improvements in copying presses." The invention "consists in combining with the ordinary copy-"ing press such parts of a lithographic press as will render one "and the same press applicable for lithographic purposes as well "as for ordinary copying." The press is composed of the parts usually employed in making a copying press, viz., a bed plate, upright arms, a cross head, a pressure screw with its lever arm, and a platen, moving in vertical guides formed on the uprights, and attached to the screw by a screw, "the point of which takes "into an annular recess formed round the nose of the screw." The bed or table however, instead of being fixed, is made "in "such manner that it may traverse to and fro." It "is bedded "upon surfaces," part of which "also act as guides, and between "whose vertical sides the table is fitted, thereby maintaining its "parallelism of motion." To the under side is attached a rack; a pinion fixed on a transverse shaft, which is mounted in fixed bearings and furnished with a winch handle, gears into the rack. The bed "is thus equally applicable to receive pressure while "stationary for a copying press, as in motion for the purposes "of lithography,"

[Printed, 6*d*. Drawing.]

A.D. 1853, March 4.—N° 544.

HINKS, JOHN, and WELLS, GEORGE.—"A new or improved "metallic pen." The patentees claim as their invention "the "making of a transverse depression on the backs of metallic "pens, at or near the part of the said pens where the central "slit terminates." When the depression extends wholly across the back, two "side slits or piercings" are cut at the middle of the depressed part, and the yielding of the pen to the pressure of the hand takes place at a point where the metal is nearly flat; consequently the pen "yields more readily than it would "do if the metal were curved, as in the ordinary metallic "pen," and the opening of the points is less. Or the pen may be made with the depression "only on the sides thereof." In this arrangement the side slits are omitted, "the ordinary slit does "not open into the depression," and a central piercing extend-*ing to the bottom* of the depression "is made for the purpose of

" detaching the points from the middle part of the body of the " pen." In the words of the patentees, "A pen made according " to our invention feels, in writing, more like a quill pen than " the ordinary steel pen does."

[Printed, 6*d*. Drawing.]

A.D. 1853, April 14.—N° 896.

HINKS, JOHN, and WELLS, GEORGE.—" An improvement or " improvements in certain kinds of boxes," namely, in such " as " are usually made of paper, pasteboard, or cardboard, and used " for holding or packing small articles, such as steel or metallic " pens," &c. The object of the invention is to keep the contents of the boxes safe from " rusting or corroding." The patentees do not confine themselves " to any particular method of making the said " boxes," but they commonly construct them as follows :—The top or bottom (or both) is wholly of sheet metal or alloy; the edges are bent and inserted " in the paper, pasteboard, or card- " board sides of the box, securing the same by paste or other " cement." Or the box is made complete in paper, &c., and the top or bottom (or both) is covered " with a thin metallic cover, " attaching the same in any convenient manner."

[Printed, 4*d*. No Drawings.]

A.D. 1853, June 3.—N° 1367. (* *)

DAFT, THOMAS BARNABAS.—" Improvements in inkstands;' these consist in " combining with an ink vessel or ink-holder a " tube with a dipping cup at its upper end, there being a collar or " stopper formed on the tube which fits into an opening at the " top of the ink vessel. The tube descends from above into and " nearly to the bottom of the ink vessel through the opening, and " by the compression of the air therein the ink is forced into the " dipping cup, and by raising the dipping cup the ink descends " into the ink vessel. The opening through which the tube passes " is lined or formed with vulcanized india-rubber."

[Printed, 6*d*. Drawing.]

A.D. 1853, June 16.—N° 1458.

BADDELEY, WILLIAM.—"An improved label damper," which is composed of a reservoir (of earthenware, glass, or metal capable *of holding water*), having a cover with an arch in the middle; a

central roller furnished with a handle; three smaller rollers, and an endless band. The central roller is "mounted on a spindle, "which turns in bearings in the sides of the reservoir." Two of the smaller rollers, one on each side of the larger one, turn on axes which "rest upon shelves on each side within the reservoir;" the third, "the axes of which play in two vertical slots," is placed below the larger one. The endless band passes under the larger roller and encloses the smaller ones. Two slots are cut in the cover, one at each end of the arch; and a label put in through the one will, by turning the handle, pass under the larger roller (which is partly immersed in water) and come out damped at the other slot. The damper may be somewhat varied in construction. The reservoir may be a cup or vase, in which is a metal ring carrying the spindle of the larger roller "and also two guide wires." The side rollers "are supported by and turn upon the horizontal "portions of the guide wires," and the bottom roller turns within the circular portion of them. The band, slots, and action are the same as before described. The bottom roller may be surrounded "with linen or other textile fabric, by which means the action of "the instrument is maintained so long as any water remains in "contact" with the bottom roller.

[Printed, 6*d*. Drawing.]

A.D. 1853, July 15.—N° 1693.

GOODYEAR, CHARLES.—"Improvements in the manufacture of "pens, pencils, and instruments used when writing, marking, and "drawing." The material of which the articles are made is india-rubber kneaded with sulphur, "or matters which contain or "will give off sulphur when subjected to heat;" the proportions are "two parts by weight of india-rubber and one part by weight "of sulphur." For pens the compound is rolled out into a thin sheet of the thickness of a strong quill, and cut up into suitably narrow strips; these are (by preference) placed between two surfaces of glass, the one concave, the other convex, and subjected to heat for about six hours. The patentee finds "that the best "means of applying the heat is by means of a bath of water." The temperature is gradually raised, "say to 230° of Fahrenheit "in about half-an-hour, and at this temperature the heat is to "*remain for about* one and a half hours; the heat is then again to "*be raised gradually* to about 295° to 350° of Fahrenheit during

"the remainder of six hours, when the compound and the glass "moulds or surfaces are to be removed and allowed to cool." The strips are then taken from the glass, cut into lengths, and made into pens, instruments being employed, "such as are used for "making pens out of parts of quills." Slates are made by kneading "the powder of slate, or of porcelain for white slates," with the above compound, as much of the powder being introduced as it will take up "and yet retain a plastic state, such as to admit of "the same being rolled into a sheet." The sheets are placed between flat plates of iron (with tin foil between) and subjected to heat as before described. If the compound is to be used for slate pencil, it is to be cut up into suitable forms.

[Printed, 4*d*. No Drawings.]

A.D. 1853, July 18.—N° 1706. (* *)

ALEXANDRE, ISAIE.—"Improvements in metallic pens and "penholders," consisting of:—

1st. "Communicating magnetism to steel pens" "to diminish "their tendency to corrosion."

2nd. Constructing penholders so that they shall cause "a "voltaic current to pass through the hand of the writer."

The method shown in the Drawings consists of cutting a double-threaded screw on the wooden penholder, and inserting a copper wire in one thread and a zinc wire in the other thread; other similar methods may be employed.

In using one of these penholders "the voltaic current generated "by the contact of the hand with the metals of the holder "destroys or diminishes the tremulousness of aged persons and "invalids, and gives tone to the nervous system of such "persons."

[Printed, 6*d*. Drawing.]

A.D. 1853, August 10.—N° 1856.

PETERS, HENRY.—(*Provisional protection only.*)—"Improve-"ments in pens and penholders." "My improvement in "pens consists in making them of tortoiseshell and the "other shells called tortoiseshell in commerce. I press thin "sheets of the said shell into a semi-cylindrical form, and from "these I cut the pens, and fashion them by any suitable means. "Pens made of tortoiseshell have all the desirable properties of

" quill pens, and wear much longer. When worn they can be " mended with the ordinary pen cutting machine. My improve- " ment in penholders consists in making that part of the said " holder in which the pen is inserted of tortoisehell, or tortoise- " shell and metal, and the other part of the said holder of wood " covered with tortoiseshell; the said covering of tortoiseshell is " effected by attaching thin sheets of tortoiseshell by any conve- " nient cement."

[Printed, 4*d*. No Drawings.]

A.D. 1853, August 10.—N° 1859. (* *)

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—" Im- " provements in desks, work boxes, dressing cases, tea caddies, " and similar articles, and in the arrangements and fittings " thereof." It relates to " the construction and ornamentation of " desks, work boxes, and similar articles partly with the material " used in the manufacture of what are technically known as " 'agate buttons,' and for which a patent was obtained in the " year 1840 by Mr. Richard Prosser. The body of the desk is " made of any cheap common material, as pine wood, and it is " then covered over with the 'agate' composition formed into " sheets or ornamental pieces, so that the desk may have the " appearance of being wholly or nearly composed of this material; " or, instead of constructing a box of common material, a mere " skeleton frame only may be employed, the sheets of ornamental " material being held in position by such frame, so as in them- " selves to form the box or desk. And the same system may be " carried out with sheets of glass, which may be silverised so as " to give the article the appearance of being composed of mirrors " throughout." " In the fittings of a writing desk the inkstand " is arranged with an elastic cover piece of india-rubber or " similar material contrived to completely cover up the ink. " Through the centre of this elastic diaphragm a small aperture is " made for the entrance of the pen in passing down to the ink, " and as this aperture fits to and embraces the pen, the latter is " always kept clean and free from superfluous ink. And to give " this elastic cover a better effect, it is made in two layers set one " upon the other, and each slitted through at right angles to one " another, so that the pen is more closely embraced."

[Printed, 4*d*. No Drawings.]

A.D. 1853, August 10.—N° 1861. (* *)

PRINCE, ALEXANDER.—(*A communication.*)—(*Provisional protection only.*)—"A press applicable to the several purposes of "lithography, autography, typography, chromo-lithography, or "printing in colors, copper-plate printing, cylinder printing, em-"bossing, and copying letters."

The elements of this press consist of a wooden "rake" with a "rake holder" in a box on cylindrical springs. Beneath this rake is a carriage with a leather to bear the friction given for the impression attached to one end of it. This carriage receives the stone, type, or original to be copied. It is supported by uprights and driven by a cylinder beneath it, which is worked by a star-wheel. It is guided by "rules" and "rails," the latter sliding against the interior face of the former, which are kept parallel by cross bars. The sheet is laid on by hand. The rake descends upon the leather for the impression by the action of an excentric lever. On removing the pressure, the cylindrical springs return the rake and disengage the carriage, which is then moved so as to remove the stone or register.

For chromo-lithography, a peculiar piece of mechanism is introduced for the purpose of holding the paper in its proper position on the stone.

For typography the cylinder is removed. The form is placed in the carriage and a tympan and frisket substituted for the leather. The impression is given by the descent of a plate (connected with the rakeholder) by means of a lever.

For copper-plate printing two cylinders are used. "The print-"ing is effected after the usual method. It will be observed that, "in the above state, this press may be used as a cylinder for "pressing paper and cards. While the press is mounted for "lithography, copper-plate printing, and typography, it may be "also used for letter copying. In the first case, put a leather "over the register and roll it under the cylinder. In the second "case, pass the letter between the cylinders. And, in the third "case, the copy is obtained by the flat pressure of the plate," above described.

[Printed, 8*d*. Drawings.]

A.D. 1853, August 11.—N° 1872. (* *)

NAYLOR, HENRY MOORE.—Improvements in apparatus for affixing *postage* and other stamps to letters and documents. The

apparatus consists of a chamber "to receive a pile" of "stamps "with the adhesive surfaces upwards, and the upper one is at all "times in a position to be taken on to a letter or document when "the same has been moistened by another part of the apparatus, "which consists of a roller with a sponge or porous surface, and "water is supplied thereto by another roller revolving in water, "or having an endless cloth or fibres moved thereby through "water, or the moistened sponge or fibre is lifted up by a lever or "instrument. The apparatus is closed in a case." "The under "side of the cover of the chamber containing the adhesive stamps "has a projection of vulcanized india-rubber or other suitable "material," which "offers a flexible and elastic surface for the "envelope, letter, or other document about to receive a stamp to "be pressed against it." In the lower part of the chamber containing the stamps is a piston which is worked upwards by a lever when a stamp is being pressed on to the document, envelope, &c. On releasing the lever the piston descends by being drawn down by a fixed spring of vulcanized india-rubber.

[Printed, 6*d*. Drawings.]

A.D. 1853, August 13.—N° 1904. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Louis François Alexandre Deseille.*)—(*Provisional protection only.*)—"This invention relates to a peculiar preparation of gutta percha "for rendering it either solid or liquid, and consists in the appli-"cation of a carburet of hydrogen for liquifying it, and of any "colouring powder, which is kneaded into it when it is required "to be solidified." "The carburet is prepared from oil of tar." "By the aid of this liquid gutta percha may be readily dissolved, "either warm or cold. By a small addition of alcohol to the "carburet, and a little essence of lavendar to dispel the smell of "the carburet, a liquor is obtained which has the property of "removing all grease stains." "Gutta percha thus rendered "liquid may be applied to the construction of inking rollers for "printing machines, and various other similar purposes." "By "admixture with dissolved gum copale, an adhesive varnish is "produced.

"The liquid gutta percha may be also employed for rendering "*waterproof all kinds* of textile or other fabrics." "For solidi-"*fying gutta percha*, a coloring powder is kneaded into it, and

" the mass is then passed between suitable rollers. This sub-
" stance may be applied to the construction of various articles,
" such as tubes, coffins, vases, statuettes, hafts, ornaments, boxes,
" and sheets for letter copying presses."

[Printed, 4d. No Drawings.]

A.D. 1853, August 18.—N° 1939. (* *)

HUGHES, THOMAS.—(*Provisional protection only.*)—"An im-
" provement or improvements applicable to writing slates, pocket
" and memorandum books, and other such like articles." It consists "in applying a spring clip or holder to slates, memoran-
" dum and pocket books, &c., for the purpose of holding the
" pencil to be used therewith." "In applying it to slates,"
" attach a strip of sheet steel or other elastic substance by one of
" its ends to the frame of the slate, and its other end, bent into
" a semi-cylindrical form, presses against the said frame." "When
" the pencil is not in use it is inserted under the loose end of the
" spring, and is held between it and the frame of the slate." Or,
" make the spring fastening of a strip of india-rubber attached
" by its two ends to the frame of the slate." It is "also appli-
" cable to memorandum and pocket books for the purpose of
" preventing the loss of the pencils used therewith."

[Printed, 4d., No Drawings.]

A.D. 1853, August 19.—N° 1941.

LUTWYCHE, ALFRED.—(*Provisional protection only.*)—"An
" improved mode of manufacturing steel or other metallic pens."
To quote the patentee's own words:—"My invention consists in
" an arrangement of the cutting out tools, whereby I entirely
" avoid making any waste, except in the curving of the points
" and rounding of the ends. I effect this mainly by forming a
" stop or stops in the top tool, and which said stop or stops are
" sufficiently long so as to descend into the under or bed tool;
" these stops regulate the advancing of the metal, as it must be
" pushed forward to the stops at each turn of the press. In
" addition to the great reduction of waste the stop forms a regu-
" lator for the worker, thereby greatly diminishing the skill and
" judgment generally required in the use of steel pen tools."

[Printed, 4d., No Drawings.]

A.D. 1853, August 30.—N° 2007. (* *)

GOODYEAR, CHARLES.—(*Partly a communication.*)—(*Provisional protection only.*)—"Improvements in combining india-"rubber with other matters for writing, marking, and drawing." It consists in "combining plumbago (black lead) with india-"rubber and sulphur, and subjecting the same to heat, in order "to produce a change by which a compound is obtained, which, "when made up into pencils, or other forms, is suitable for "writing, marking, and drawing."

[Printed, 4*d*. No Drawings.]

A.D. 1853, September 2.—N° 2028.

HINKS, JOHN, WELLS, GEORGE, and DOWLER, FREDERICK. —"New or improved machinery to be used in the manufacture "of metallic pens and penholders."

The invention claimed by the patentees is "the construction of "machines for giving a semi-cylindrical figure, or a figure par-"tially cylindrical and partially semi-cylindrical, to metal pens, "and giving a cylindrical figure to the metallic part of pen-"holders, and impressing inscriptions and devices upon metallic "pens and the metallic part of penholders by means of dies "actuated by levers, the said levers being actuated by cams." The machine first described "is fitted to manufacture pens having "a cylindrical barrel, as well as the barrel or cylindrical parts of "metallic penholders." On the main shaft, having a fly wheel, driving pulley, and clutch box, are four cams; the two outside ones actuate two levers "having motion in a horizontal plane" and turning upon axes on the bed of the machine. The lever nearest the pulley actuates a feeder which consists of two plates connected together, "having a sliding reciprocating motion on "the bed of the machine," and having a fixed plate between them. The lever nearest the fly wheel actuates a sliding rod or mandril. The other two levers move in vertical planes and turn upon a common axis; they actuate two moveable dies, the face of the first of which is semi-cylindrical and convex, and the face of the second nearly semi-cylindrical and concave; underneath these are two fixed dies, both semi-cylindrical and concave. A blank being placed on the fixed plate, and the machine set in motion, the *tongued end of the* upper moveable plate pushes the blank on to *the face of the first* fixed die; the dies descend, and the first

forces the blank into the lower one, giving it a semi-cylindrical shape. On the rise of the dies (which is caused by a helical spring) the lower moveable plate, which slides into the first lower die, pushes the blank into the second die, where is the mandril ready to enter it; the second die descends, and closing the vertical sides around the mandril completes the cylindrical shape. The second die, owing to the form of its cam, descends twice whilst the first descends once; this is for the purpose of more effectually closing the blank upon the mandril. On the next rise the mandril draws back with it the pen or holder; and "a "fixed stop on the bed of the machine" catches the edge of the pen or holder and removes it from the mandril, when it falls through a hole into a receptacle. In a machine for making pens which have not a barrel, the second pair of dies and the mandril are not required. The second machine described is for the purpose of impressing an inscription or device on pens in addition to shaping them. The order in which the principal parts are attached by cams to the main shaft is as follows:—A lever setting the feeder in motion; a second lever giving motion to a tongue "working under the fixed plate;" a third working the first die; a cranked rod connected to "a carrier;" and a fourth lever working the second die. The blank is pushed, as before, on to the first fixed die on which is engraved the inscription; the descent of the first die impresses it. The blank is pushed off the die by the tongue working under the fixed plate; the carrier then moves until the blank is opposite the other tongue of the feeder which pushes it under the second die, "where "by the descent of a suitably formed die it is pressed into a "concave form." If the pen have a barrel, or if it be wished to impress a penholder, the second moveable and fixed dies of the first machine and their appendages must be added.

[Printed, 10*d*. Drawings.]

A.D. 1853, September 6.—N° 2054.

SOMMERVILLE, ALFRED, and TWIGG, CHARLES.—"Im- "provements in penholders," which said improvements are applicable to the manufacture of various articles. The apparatus required is a pair of rollers and a feeding trough. The rollers (for the manufacture of penholders) are "of about twelve inches "in diameter, and five or six inches wide," grooved across their

face "parallel to their axis," and so geared "that the cavities will "always come exactly opposite each other when in motion." The feeding trough, containing pulp, is furnished with wire gauze and holes in the bottom to allow some of the moisture to drop through; it has also a fender, "working up and down in the side "grooves," and "secured to the front board" by a screw. The use of the fender is to regulate the supply of pulp to the rollers. The penholders so made will have to be divided, dried, and finished by japanning and polishing. "It may be necessary in "some instances, after they are divided, and before drying, to pass "them between a pair of dies," "in which process they may be "slightly tapered in the part that enters the pen, and made "round and uniform at the other." The trough may be dispensed with by forming the pulp into thick sheets, "felted in the "usual way." The rollers may be made much wider, and turn out "continuous sticks of hard compressed pulp," which can afterwards be cut into suitable lengths. To evaporate the moisture in the pulp, heat is supplied by steam to the rollers through their axes, which should be made hollow.

[Printed, 8*d.* Drawing.]

A.D. 1853, September 7.—N° 2055.

SMITH, ISAAC, and SOMMERVILLE, ALFRED.—"Improve-"ments in metallic pens and penholders." The invention, whereby the patentees claim the regulating of the hardness or softness of the pen, consists in applying to the back thereof "a "sliding spring saddle." This saddle is made with one or more curves, and is attached by bending its arms "round the parallel "edges of the pen so as to retain it thereon." The spring may be of an angular form, and curves may be made in the arms "for "the purpose of adapting the saddle to pens of different sizes." This saddle may be used "in connection with points or nibs "having themselves little or no elasticity, that is to say, composed "of two separate or detached nibs placed in a holder in which "they are capable of yielding." The penholders are made with grooves cut in them, either rectilinear, or helical, or doubly helical (one "right-handed and the other left-handed") or with any number of grooves. When the penholders are hollow cylinders, "the slit may be made very fine," or "lines of any other form or "*ornamental designs* or devices may be cut on or in them."

The patentees assert that increased elasticity is obtained by "cutting away a portion of the substance of which the holder is "made."

[Printed, 8d. Drawings.]

A.D. 1853, October 13.—N° 2360.

PIPER, JOSEPH.—(*Provisional protection only.*)—"Improvements "in apparatus for affixing adhesive stamps and labels."

"This invention consists of a combination of apparatus, by "which stamps or labels are taken from a suitable holder, are "moistened on their adhesive surfaces, are carried to the place "where the letters or surfaces on which they are fixed are placed, "and are pressed on to make them adhere. For this purpose a "lever apparatus is used, and is caused to vibrate on its upright "axis. One end of this lever passes under a hollow trunk or "holder, within which the stamps or labels are contained, and "moves the lowest one into position to be moistened by a roller "or instrument on its adhesive side; the other end of the lever "comes to the stamp or label thus moved into position, and "takes it between nippers, and carries it to the position where it "is to be applied, when a presser is caused to descend as the "nippers go away, and to press the stamp or label on to the "surface to which it is desired it should adhere."

[Printed, 4d. No Drawings.]

A.D. 1853, October 19.—N° 2411.

SHAW, ROBERT.—"Improvements in writing instruments." The patentee describes various modifications of a fountain pen, consisting of a metallic pen and a tubular holder, of any suitable metal or other material, which "answers as the ink reservoir." The holder "is entirely closed, except at the lower end, where the "pen is entered, and at this opening, or a short distance above "it, a cross or bridge piece is fitted in as a support for the fluid." The interior may be protected from the corrosive action of the ink by japanning, silvering, or otherwise. Through the opening which admits the pen "a number of very fine wires, hairs, or other "minute fibres are passed" and soldered or otherwise fixed to the top of the holder, "whilst their opposite ends lie against the in-"side of the pen," terminating within a short distance of its points. There is a small air hole in the lower end of the holder.

The conducting wires may be soldered to the pen, "and lie loosely "inside the tube," and the air hole may have a small tube fitted to it internally. Or provision may be made for the introduction of air "at the bottom where the conductors emerge near the nibs." Again, the wires may extend only "one-third the length of the "tube; a still stronger conducting wire, however, is soldered" to the top of the holder, "its opposite end lying loosely in the "air hole," which in this modification is formed with a small tube on the outside. Again, the stronger wire may be soldered to both ends of the holder, "so that it shall be eccentric to the "axis of the barrel; this gives a more certain and a quicker effect "to the flowing ink." "The reservoir may be charged by com- "pression of an elastic chamber having a conducting pipe entered "into the barrel, and a cap may be added for covering and pro- "tecting the pen when carried in the pocket."

[Printed, 6*d*. Drawing.]

A.D. 1853, November 25.—N° 2750.

BELLFORD, Auguste Edouard Loradoux.—(*A communication.*)—(*Provisional protection only.*)—"Improvements applicable "to pens and pencils for writing or drawing." The patentee substitutes "for the metal fittings which are used generally for uniting "the nibs of metallic pens to the penholders a fitting of caoutchouc, "either pure or sulphurized, or combined with any other matter, so "as to preserve in every season a suitable elasticity and softness. "The nib of the pen being placed between the holder and the "fitting, or in a cavity formed by the caoutchouc itself, is moved "with it by the hand in the action of writing, whilst almost all "the mechanical force is transmitted to the caoutchouc, and the "two points of the nib are not separated from each other." To continue in the patentee's own words:—"In particular I employ "a simple tube of caoutchouc, in which I place the end of the "holder. I may also employ penholders entirely composed of "caoutchouc, so that the contact of the holder with the meta- "carpal bone and joint of the fore-finger which articulates with "the metacarpus may not cause the fatigue generally caused by "the rigidity of the holders. I apply the same improvement to "pencils of whatsoever kind they may be, by uniting them by an "elastic fitting of caoutchouc to a holder."

[Printed, 4d. No Drawings.]

A.D. 1853, November 28.—N° 2772.

MACOMIE, ALEXANDER.—" An ornamental piece of furniture, " shaped like a vase, constructed to contain a writing and draw- " ing desk." The patentee first selects or designs a vase whose proportions, &c., agree with the purpose for which he intends it; he then arranges the ornaments, " so that any required portion " can be made to separate without harm to the design." He describes an octagonal vase. Three of the sides are made into one piece or segment, locked to the part which forms the cover, and hinged just above the stand. " This portion forms a con- " venient box under the desk; " the upper surface slides in over this as a box lid, the grooves being made " in the sides of the " desk in preference to making them in the box," and it is retained in its place by a button. The lower surface is made to fold over the upper; both are covered with leather and united by flush hinges. A hollow space between the box and the hinge is covered by a lid; and here a ledge " can be slid up when needed, " to retain a drawing whilst it leans against the vase." Or a swing box may be placed there, " to keep the ink vessel perpen- " dicular, whether the desk is open or shut." In the interior of the vase are made various drawers and conveniences for papers, pens, pencils, brushes, &c. The lid " opens till perpendicular on " a stop hinge," and has a recess to hold colour boxes. Again the segment may open as a door, and the desk, " which, when " shut, stands up, & fills the whole front of the opening, is let " down;" " & is at once a desk having the cabinet in front, " containing all the requisites for drawing and writing ready to " hand." The foot may contain a drawer, and two holes are made in the desk to hold a moveable ledge. These cabinet vases are manufactured of any suitable materials, either singly or com- bined, " as may best serve for strength, ornament, & use."

[Printed, 10*d*. Drawings.]

A.D. 1853, December 2.—N° 2806.

BAIN, ALEXANDER.—(*Provisional protection only.*)—" An appa- " ratus for damping paper and other substances " preparatory to affixing adhesive stamps, labels, &c.

" My apparatus is composed of a case closed air-tight at top, " while at bottom it is closed by one, two, or more layers of cloth " or other porous substance; upon the top of this cloth is a piece

" of spongy substance, and on the top of it and fitting the case " accurately is a piston of metal, and above this a supply of " liquid. The liquid is introduced through an air-tight stopper, " fitted in any convenient position at the upper part of the case. " The top of the case is formed of thin sheet metal, to which is " attached a handle, or not, as found desirable. When a handle " is used I connect it by a tube passing through the top to the " metal piston. On applying pressure at the top of the case, " liquid will be expressed through the cloth on to the paper or " other substance required to be damped."

[Printed, 4*d*. No Drawings.]

1854.

A.D. 1854, January 7.—N° 43. (* *)

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—" Im- " provements in writing apparatus." It relates first to an " arrangement of ever-pointed pencil, or adjustable writing or " marking instrument." "The main shell or barrel of the in- " strument is of tubular metal, and has an external spiral groove " formed upon it." "The tube is slit through longitudinally for " the passage of the propeller, which has only one prominence " upon it, and this prominence is quite covered up by the external " screw traverser, which has an internal ring groove formed in it " to receive and cover up the prominence." "The holding point " of the barrel screws off, or is removeable at pleasure, for the " deposit in the barrel of the leads or writing substances." Second, an inkstand or holder " is arranged with an elastic cover " piece of india-rubber, or similar material, contrived to com- " pletely cover up the ink." " Through the centre of this elastic " diaphragm a small aperture is made for the entrance of the pen " in passing down to the ink, and as this aperture fits to and " embraces the pen, the latter is always kept clean and free from " superfluous ink." " And to give this elastic cover a better " effect, it is made in two or more layers set one upon the other, " and each slitted through at right angles to one another, so " that the pen is more closely embraced."

[Printed, 4*d*. No Drawings.]

A.D. 1854, February 10.—N° 333.

JOHNSON, JOHN HENRY.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in the manufacture of metallic "pens." "This invention relates to a peculiarity in the form of "steel or other metallic pens, whereby greater durability is ob- "tained, accompanied with cheapness and increased freedom of "action. The improved pen consists of a flat piece of thin metal "formed with recesses or hollows on each side, for holding ink; "these recesses communicate with the split in a similar manner to "the opening of an ordinary metallic pen. The shank or upper "part of the pen is made slightly tapered, for the facility of securing "it effectually in its holder, which is, of course, suitably formed to "receive it. The nib or point of the pen is ground and finished "up on both sides, so that each side may be used alternately, and "if desired, one side may be made with a broad nib and the other "with a fine one, to suit the taste of the writer."

[Printed, 4*d.* No Drawings.]

A.D. 1854. February 13.—N° 341.

AYRES, GEORGE.—"An improved clip or file for holding "papers or other articles." The clip consists of a spiral metallic spring, shaped and adapted for holding papers, &c., so that any one can be taken out "without detaching the whole as in the "ordinary clip." It may be made in different ways, the spring may stand vertically on a base loaded with metal or other suitable material, the lower end being secured to the base, and the upper end to a cap. By bending the spring on either side the coils are drawn asunder, and a space is made for the admission of papers, &c., the contraction of the spring holding them firmly. Or the spring may be bent into the form of an arch having each end secured to the base, and a vertical spring clip may be placed at each end of the arch. Or the spring may be fastened to a mill-board back, and hung against a wall by a hook. "To retain a small "number of papers either for carrying in the pocket or for use "upon the writing table," a clip is made "by cutting one, two, "or any other number of coils of wire from springs of varying "sizes," and rivetting or otherwise fastening a stud at each end. All these clips may be rendered ornamental by gilding, or bronzing, or by any other external decoration.

[Printed, 6*d.* Drawing.]

A.D. 1854, March 10.—N° 580. (* *)

MILL, WILLIAM. — "Improvements in inkstands or ink-"holders;" these relate to "admitting and retaining for use a "supply of ink in the dipping cups of inkstands and inkholders." In constructing the dipping cups of inkstands or inkholders they are made wholly or in part flexible and elastic, with openings or perforations through which the ink from the vessel passes into the dipping cups, the passages or openings having a tendency to close by reason of the elasticity, and the ink will only flow into the dipping cups so long as the passages are kept open by the use of pens or other instruments, or plugs or valves may be used to close the passages between the dipping cups and ink vessels. In supplying air to the interior of the ink vessels to replace the outgoing ink, air passages are made in the vessels, which may at all times be open where the dipping cups are provided with means of shutting off the supply of ink to them, or the openings into the dipping cups may be small, and the air passages into the ink vessels closed with plugs or valves, by preference kept closed by springs. In preference the dipping cups are arranged "below "the inner bottom surface of the ink vessels." The dipping cups for inkstands in preference are made of gutta percha, and the elastic materials through which the passages are made are different shaped pieces, and tubes of vulcanized india-rubber. If the passages are made through a non-elastic substance they are closed "by springs or vulcanized india-rubber rings or bands."

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1854, April 12.—N° 860.

PIPER, JOSEPH. — (*Provisional protection only.*) — "Improve-"ments in apparatus for affixing adhesive stamps and labels." The patentee describes his apparatus as follows:—"This inven-"tion consists of a combination of apparatus by which stamps or "labels are taken from a suitable holder, are moistened on their "adhesive surfaces, are carried to the place where the letters or "surfaces on which they are [to be] fixed are placed, and are "pressed on to make them adhere. For this purpose a lever "apparatus is used and is caused to vibrate on its upright axis; "one end of this lever passes under a hollow trunk or holder "*within* which the stamps or labels are contained, and moves the "*lowest one into* position to be moistened by a roller or instru-

" ment on its adhesive side; the other end of the lever comes to " the stamp or label thus moved into position, and takes it " between nippers, and carries it to the position where it is to be " applied, when a presser is caused to descend as the nippers go " away, and to press the stamp or label on to the surface to which " it is desired it should adhere."

[Printed, 4*d*. No Drawings.]

A.D. 1854, April 19.—N° 901.

HADDAN, JOHN COOPE.—(*Provisional protection only.*)—" Im- " provements in adhesive stamps and labels." The patentee divides his invention into four parts, He proposes to render " the tearing process (of separating the labels) less liable to deviate " from the intended direction;" First, " by making the perfora- " tions or openings with angles presented in the said intended " direction of separation, and either without or with a slit or cut " beyond and in continuation of the said angles." Secondly, by " making zig-zag or wave line, or other curved or straight slits " or cuts, between the several labels." Thirdly, by " weakening, " removing, or destroying, or partially removing or destroying, " or cracking, either the paper or material of the labels them- " selves, or the gum, cement, or adhesive material upon it, " or both of these materials, at the intended lines of separa- " tion, by a pressing or stamping process, or by a folding " process, or by the application of acids or other chemical " agents, or in any other suitable manner." Fourthly, by " com- " bining any two or more of the above improvements, or any " parts of them together."

[Printed, 6*d*. Drawing.]

A.D. 1854, April 25—N° 945.

DE BEAUREGARD, FELIX ALEXANDRE TESTUD.—(*Provisional protection only.*)—" Certain improvements in the manufacture of " inks, and in the preparation of papers for receiving the same." The paper is prepared by immersion in one of the ingredients of the ink, and the writing is performed with another ingredient; other means than immersion may be employed; the ingredient may be added to the pulp. " Thus, a solution of chloride of iron mixed " with phosphoric acid and a little gum arabic forms a colourless " ink, adapted for writing blue " upon a paper prepared with a

solution of ferrocyanide of potassium. "By preparing the paper "with gallic acid the writing will be black." An ink, which is colourless, or nearly so, "but which becomes black upon ordinary "unprepared paper," is made "by dissolving iodide of potassium "and iodine in water, and adding to it red chromate of potash, and "as much cyanide of potassium as will decolorize it; a small quan- "tity of gum arabic is added." These inks and papers may be employed in stamping and printing, and in applying private marks to articles.

[Printed, 4*d*. No Drawings.]

A.D. 1854, May 8.—N° 1029.

GOODMAN, GEORGE BARRY.—(*A communication.*)—"Improve- "ments in apparatus for holding together letters, music, and "other loose sheets." The apparatus consists of 1. an outside back or holder, "made of very strong boards," the central portion being of wood covered with leather; 2. a portfolio for holding the papers, &c., and "forming a temporary back or covering to the same," and when full "a separate and complete book in itself;" and 3. the following mechanism:—A box of thin brass or other suitable metal is fastened to the wooden portion by pins, screws, or other means. Inside the box are two helical or other springs working on fixed slotted spindles, which serve as guides to the springs and to two curved lever arms; these move on fixed centres, their free ends pressing against screw pins which connect two sliding pieces with an angular sliding bar having a handle at each end; "and "in order to allow of the sliding of the screws to and fro with the "bar, the box is slotted at the top." On one side of the box is formed a projecting ledge through which are screwed two screws which pass through the back of the portfolio and enter a fixed bar. To the front of this bar are secured a number of prongs or wire points (having a transverse eye near the end of each), which pass through corresponding holes in the sliding bar. To insert papers, &c. into the portfolio, the sliding bar is drawn by the handles, until it is caught by a "spring-cranked catch" which takes into a slot in it. The papers, &c., are held vertically between the points of the prongs and the front of the bar. The catch is pressed with the thumb, the bar flies back, pushes the papers on to the prongs, and presses them against the portfolio. When the portfolio is full, it is removed by unscrewing the screws; the

prong points are then pushed through the opposite cover of the portfolio, and a hollow bar is laid over them. This bar is perforated to admit the points, and a thin wire slide passing through it and the eyes of the prongs effectually secures the whole. This bar and slide are kept until wanted in "a slot or pocket in the outside "back."

[Printed, 8*d*. Drawing.]

A.D. 1854, May 30.—N° 1192.

MORDAN, FRANCIS.—(*A communication.*)—(*Provisional protection only.*)—"An improved inkstand." The improvements consist, "firstly, in establishing by means of a cock a communication at "will between the interior of the inkstand and the atmosphere "through a small channel which crosses the tube to which is "adapted the key of the cock; secondly, in the adaptation to the "cock of a fixed or moveable air-pump, either sucking or forc-"ing," and constructed of a ball of caoutchouc perforated at top and bottom. A drawing of the inkstand (but without description) accompanies the provisional specification. The inkstand is composed of a covered reservoir with a dipping cup attached to one side, a vertically bored standard provided with a stop cock, and a hollow ball of caoutchouc or other elastic material, cemented or otherwise secured to the top of the standard, and so placed that the hole in its bottom, the bore of the standard, and a hole in the top of the cover correspond. There is another hole in the cover for filling, &c.

[Printed, 6*d*. Drawing.]

A.D. 1854, May 31.—N° 1206.

WILEY, WILLIAM EDWARD, and LAVENDER, EDWARD.—"Improvements in the manufacture of certain kinds of metallic "pens." The invention "relates to such pens as are usually "made of gold and silver, and tipped with iridium osmium alloy, "and consists in methods of connecting the gold with the silver "part of the same." The piece of silver or other metal or alloy used is in shape somewhat like the blank from which a pen is made, with the part cut out in which the slit and nibs are formed; and the piece of gold, platinum, or other suitable metal or alloy, is in shape somewhat resembling a diamond, "having the tip of

" iridium osmium attached thereto." The two pieces are connected by soldering, rolled into the proper shape, and afterwards made into a pen by the usual process. " When the gold is only " required on the back of the pen," the part in which the slit and nibs are formed is " indented or made thinner by pressure, so " that a plate of gold, with its iridium osmium tip laid thereon " and soldered thereto, shall give to the said part a thickness " equal to or about equal to the thickness " of the rest. This compound plate is then made into a pen in the ordinary way. Another method is by inserting a bar of gold into a bar of silver, and joining or soldering them together. The compound bar is then rolled into a sheet (the gold being in the middle) of the proper thickness for manufacturing pens therefrom, and cut up into blanks. Or it is rolled " until it has about double the " thickness it is intended the finished pens shall have ;" the blanks are then cut out, the tips are attached to the ends, and the rolling is completed. " The invention may be carried into effect in " connection with any other metals which are or may be similarly " employed in the manufacture of the said pens."

[Printed, 8*d*. Drawings.]

A.D. 1854, June 1.—N° 1220.

ROWLAND, Owen.—" An improved apparatus for damping " papers, labels, and other like articles." The apparatus is composed of a flexible waterproof vessel or reservoir, usually of a spherical shape, but not necessarily so, a sponge or other suitable porous material, and a metal case or frame (open at the top) which contains the sponge. The case communicates with the reservoir by means of a tube, which is soldered or otherwise fastened to the bottom of the case. To the tube are soldered two thin discs of metal, which are so arranged, one inside and one outside the reservoir, as to make its union with the case firm and water-tight. The reservoir is charged by compressing it and immersing the sponge; on withdrawing the pressure, the liquid will rise through the sponge. A brush of fine hair may be placed in the case instead of a sponge. The case may be made of various shapes and sizes to suit the purpose for which the damper is required, and it may be furnished with a metal cap or cover. For *offices, &c.*, the reservoir is enclosed in a box of wood or other

suitable substance, firmly fixed to a base of iron or other metal; the case is outside the front of the box, which is partially sloped off to support it, and the connecting tube is much longer. To compress the reservoir for the purpose of filling it or moistening the sponge, a button fastened to the inner end of a rod presses against it. This rod (its outer end terminating in a knob) slides freely to and fro in a nozzle inserted into the back of the box; or it may be moved backwards and forwards "by means of a screw "working through a nut in the nozzle or back of the box."

[Printed, 6*d*. Drawing.]

A.D. 1854, June 3.—N° 1241.

BARHAM, ALFRED GARRATT.—"An apparatus for damping or "moistening the adhesive surfaces of stamps or labels." The apparatus consists of an oblong box standing on a base or frame, and is divided into two portions by a transverse partition. The first portion contains one or more receptacles for labels, and a reservoir for water underneath. The second portion "forms a "trough, the sides of which are raised, and slope gradually from "the front, which is shallow, to any convenient height." The trough communicates with the reservoir by means of a perforation in the lower part of the partition. "A grating or oblong perfo- "rated plate of zinc or suitable metal" is fitted "across the "trough in such manner that a narrow portion of the end of the "said grating, which is turned down at right angles to the "remaining portion, may stand upon the bottom of the trough "near the front end, and the remainder of the grating, which "extends across the trough, may be secured to the sides and "bottom thereof and to the partition." "On the front end of the "trough, which is somewhat more elevated than the higher part "of the grating," is a hinge, "upon which turns a second oblong "grating of perforated zinc or other suitable metal." Between the two gratings is inserted a piece of sponge, felt, or similar substance. A lid, with a projecting thumb-piece for opening it, is hinged on to the front of the first portion, and "an additional "solid cover may be provided to protect the trough." The reservoir is charged through the perforation, the box being partially inverted; and the label is moistened by being placed on the upper grating and pressed down upon the sponge.

[Printed, 6*d*. Drawing.]

A.D. 1854, June 19.—N° 1338. (* *)

BOGUE, DAVID.—(*A communication.*)—"An improved apparatus "for facilitating the attachment of adhesive stamps." "The "envelope, letter, or other document is damped by a moist "sponge contained in a tray, and the damped surface is then "brought into contact with the gummed back of the uppermost "one of a pile of stamps, and the stamp is thus made to adhere "to the letter." "To secure the adhesion of the stamp to the "letter, the stamp is placed on an elastic cushion covered with "india rubber, and the pressure of the fingers being applied "thereto complete contact is obtained." "The stamps or labels, "when cut up, are arranged in a pile and placed in a box, the "sides of which are formed of four vertical plates, hinged to "a fixed bottom plate." "These hinged plates are kept in a "vertical position by means of bow springs affixed to the bottom "of the box yielding when pressed upon vertically by the descent "of the damped paper, while being brought into contact with the "pile of stamps contained therein."

[Printed, 6*d*. Drawing.]

A.D. 1854, July 3.—N° 1448.

MILNE, JOHN KOLBE.—"An improved means of holding "letters, documents, and other similar articles." An elastic band of india-rubber or other similar substance is passed through a flat tube or cover of leather, metal, or other suitable material, and fixed at both ends to a stiff unyielding board or back. The letters, &c. are placed between the tube and the board, "the "elasticity of the band serving to hold them as required." The patentee reserves to himself the right of varying the size, shape, and proportions, as well as the materials of which the holder may be made.

[Printed, 6*d*. Drawing.]

A.D. 1854, July 5.—N° 1475.

RESTELL, THOMAS.—An apparatus for holding papers and other articles, which consists of "two rigid plates or surfaces, "such as metal, horn, cardboard, papier mâché, &c," united by "bands, straps, or strings of elastic material." A hole is drilled *in each* corner of each plate; grooves are formed along the top *of the upper plate* and along the bottom of the lower one from

hole to hole; and a notch is cut near the front end of the short sides of the upper plate. The band is passed through the holes, along the grooves, and over the notches, so that the part between the notches can be taken off and the upper plate disengaged for the admission of papers, &c. These are placed on the lower plate and held secure by bringing over them the upper plate and replacing the band. The ends of the bands are fastened to the lower side of the upper plate by either a knob or a button, "which may be slipped into a slot" or a cross piece of the same material as the upper plate, in which is a groove to receive it. "Where the goods would not be injured, the top and bottom "plates of the holder may be permanently connected by the elastic "cord, and in such case the goods or papers to be held would "require to be pushed between them." For holding papers only, the band is so arranged that the front part is left free, and to the lower plate is attached a pointed wire which passes through a hole in the upper plate. A back may be added to the upper plate, so that the holder can be hung up; or the lower plate may be weighted to give it solidity for standing on a table. A portable holder may be made with several pockets or divisions; its sides are bound with a frame, and the band passes round the top through holes in the frame.

[Printed, 6*d*. Drawing.]

A.D. 1854, July 29.—N° 1678. (* *)

INGALL, GEORGE HENRY.—(*Provisional protection only.*)—"Improvements in elastic bands for holding books and papers." These bands, which usually consist of flat rings of vulcanized india-rubber, are formed instead of "elastic webbing or other "suitable elastic material with a coupling piece, by which the "band may be united at its full size, or the ends overlapped and "united to form a smaller band." "The union may be effected "by a flat metal hook and eyes attached to the webbing, or the "eyes may be worked and sewn to the band. The hook may "terminate the one end and a metal loop the other, through "which the hook passes; other methods of uniting may also be "adopted with like effect. Instead of making the band with "ends it may be annular, and provided with the means of over-"lapping by hooking or otherwise."

[Printed, 4*d*. No Drawings.]

A.D. 1854, August 5.—N° 1719.

STANSBURY, CHARLES FREDERICK. — (*A communication from Robert Arthur.*)—"Improved air-tight vessels." The invention is applicable to jars, pots, cans, bottles, colour plates, stacks or nests of colour saucers, inkstands, and other vessels. An annular groove or gutter is formed at or near the top, mouth, or neck of the vessel for the reception of the cover. The groove is partially or wholly filled with a "suitable permanent fluid when "the vessel has to be frequently opened, or with a fusible com- "position or substance, when the object is to keep the vessel "permanently air-tight or hermetically sealed." The fluids mentioned are mercury, glycerine, honey, treacle, and water, but others may be used. The fusible substance or cement is a composition of gutta percha and resin, "or a fusible alloy, melting at "or near the temperature of boiling water." If the vessels "are "not intended for transportation," the proportions of the composition are an ounce and a half of gutta percha to a pound of resin; if intended for transportation, three ounces of gutta percha to a pound of resin. The gutta percha is added while the resin is in a melted state, and the heat is continued until the gutta percha is dissolved. "When the vessel is to be used, it is "only requisite to heat its contents to the proper temperature, "warm the cover, and press it into place, retaining it there by "means of a weight until the cement or alloy becomes hard by "cooling."

[Printed, 8*d*. Drawing.]

A.D. 1854, August 22.—N° 1846. (* *)

HANCOCK, JAMES LAMB.—"An improved pneumatic safety "inkstand." This consists "in forming an inkstand with an "orifice in the reservoir for the ink covered by a diaphragm of "air-tight, elastic, or loose material, preferring vulcanized india- "rubber," "capable, when depressed at the instant of taking a "dip of ink, of causing the air contained in such reservoir to "force a small quantity of ink as a supply into the dip cup or "receptacle from which the dip is to be taken; and when pres- "sure is removed from such diaphragm, after taking a dip, the "ink remaining in the dip cup will pass back again into the "reservoir, so that a fresh quantity from the reservoir will be "*brought into* position to be taken at each dip, and the ink in

" the reservoir will be for the most part protected from dust and " other impurities."

[Printed, 6*d*. Drawing.]

A.D. 1854, September 1.—N° 1914. (* *)

DANKS, JAMES.—An improvement in inkstands, which may also be applied to the " stoppers of bottles, the packing of pistons, " and other like purposes." It consists in the " use of a ring or " rings of vulcanized caoutchouc or other elastic substance fixed " in a groove or grooves on the funnels of inkstands and label " dampers, or on stoppers, pistons, or such-like bodies." In the neck of the ink reservoir is placed a " funnel or dipping cup," having a groove round it containing " a ring of vulcanized india- " rubber," which forms an air-tight packing. By depressing the funnel or dipping cup the air in the reservoir is compressed, and the ink forced into the dipping cup. By raising the funnel or dipping cup the air in the reservoir will be rarified, and the ink will return from the said dipping cup into the reservoir. The label damper exactly resembles the inkstands, excepting that it has a disc or layer of some porous fabric, stretched over and fixed to the top of the funnel.

[Printed, 6*d*. Drawing.]

A.D. 1854, September 23.—N° 2055.

PINKNEY, ROBERT.—" Improvements in stoppers, corks, or " valvular apparatus for bottles or receptacles for liquids, and in " the machinery or apparatus employed for making the same." The invention is described as applied to an ink bottle; the stopper, of glass, stoneware, metal, or other material, is partly tubular, being bored up to within a short distance from the handle portion. In the tubular part are two lateral perforations, the front one larger than the back one, and by preference diametrically opposite to each other. In the neck of the bottle are two lateral openings corresponding with the perforations in the stopper; the opening at the back of the neck is strengthend by a lip. In bottles fitted with a spout there is inserted " an inner stopper collar piece," which is perforated longitudinally to receive the shank of the stopper and transversely to correspond to the perforations in the tubular portion. When all the holes correspond, air is admitted through the back, and the fluid can be poured out at the front.

If preferred, the tube of the shank can be made "with two "divisions." These stoppers are cast in "the usual mould formed "in two parts." On the interior of each part is a "circular or "other shaped" projection corresponding with one of the lateral perforations. A circular plunger for forming the hollow of the stopper "just touches the ends of the projections in its descent "into the mould," thereby "clearing away the material between "the sides of the plunger and the ends of the projections" and "leaving a perfectly formed aperture in each side of the stopper." If the hollow in the tube is to have two divisions, the plunger must be shaped accordingly.

[Printed, 6*d*. Drawing.]

A.D. 1854, October 17.—N° 2223.

CHIPPINDALL, ROBERT JOHN.—"An improved pencil case," which "consists of four distinct parts, besides the outer case." First, a solid metal sheath "bored through from end to end." Secondly, a metal tube moving up and down in the outer case "by "means of the usual external collar or slide," to which it is pinned. The tube is made to fit the sheath accurately, so that the latter "may move freely up and down, and be retained by "the friction of the outside of the sheath and the inside of the "tube, in whatever position it may be placed." A groove in the sheath, extending to within an inch of the point, "admits of a "plug or stop" which prevents it from being entirely withdrawn from the tube, and permits it to be pushed back into the tube as far as needed. A metal disc, perforated in the centre, is soldered into the tube at about a quarter of its length from the upper end, and a cap is screwed on or otherwise firmly fixed on to the top. Thirdly, a wire with a collar soldered to it, which passes through the hole in the disc into the bore of the sheath. The collar should fit the bore of the tube easily, and the top of the wire above the collar must not quite touch the cap. Fourthly, a spiral spring, which is placed between the collar and the cap, attached to either, and keeping the collar in close contact with the disc. The lead is inserted at the point, or a portion of the sheath may be made to screw off and on for the insertion of the lead. The collar of the wire being constantly pressed downwards by the spring, the lead will be projected from the point of the sheath *exactly* the length that the top of the wire is from the cap.

[Printed, 6d. Drawing.]

A.D. 1854, October 21.—N° 2250.

HEYWOOD, BENNETT JOHNS.—(*Provisional protection only.*)—"Improved apparatus for affixing postage and other stamps to "envelopes, letters, and other documents." The damping is effected "by any one of the ordinary plans, or by the following "contrivance:—Mounted on a pillar or other support is a pad "kept damp by capillary attraction, and over this pillar slides a "frame which carries a flat pressing piece, and is supported by "bearing springs. The paper to be damped is laid on the pad, "and the pressing piece being brought down upon it by the "hand of the operator, moisture from the pad is imparted to the "paper. The stamps are piled up with the gummed face up-"wards in a rectangular box open at both ends, and capable of "sliding up and down upon a pillar which contains a spring for "pressing the box upwards. Surrounding this box is a sliding "rectangular frame, which is borne upwards by bearing springs. "This frame carries a pressing piece covered on its under face "with some elastic substance, and is intended to be pressed "down upon the letter or other document to be stamped. The "letter with the damped part downwards is placed over the pile "of stamps, and the sliding frame is depressed by the hand of "the operator, whereby the letter is brought into close contact with "the gummed surface of the stamp, and the adhesion of the "stamp thereto is effected. The damping may also be effected by "fitting a box containing a sponge on the top of the pressing "piece; or the under face of the pressing piece may be covered "by a piece of cotton tape, which is kept damp by capillary "attraction, one end of the tape being immersed in water in a "box adjoining."

[Printed, 4*d*. No Drawings.]

A.D. 1854, October 23.—N° 2252.

ABELL, EDWARD.—"An improved instrument to assist the "hand in writing." The patentee thus describes his invention:—It "consists of a small instrument, a portion of which is in the "form of a ring, so as to slip over the fore finger, or the fore "and middle fingers together, and having underneath a short "metal bar attached outside the ring, so that one end shall be "within the hand, while the other end projects outwards over and "towards the thumb, there affording a stay, rest, or fulcrum,

" against which the stem of the pen or the like shall fall back " when held as usual between the thumb and fore fingers. The instrument, of metal, or other convenient material, or combination thereof, may be either in a ring-form open at one part with the ends " bent tangetically to the ring ;" or a complete ring, attached to a small plate made to slide within the groove of a bar ; or a ring cut through, but of sufficient spring to keep closed, with " a portion of an annular tube, slid on the ring through the " opening." There may be " very numerous " modifications of this invention. " The ring and tangetical bar " may be " in one " piece or separateable, or hinged or otherwise secured. The two " projections also may be obtained by a curved cylinder sliding " on the ring," or they may be of any other form or shape. " The instruments may sometimes have several rings, made either " narrow or broad enough to be portions of a tube, and they may " likewise be made adjustable by screws, springs, or other suitable " arrangements."

[Printed, 4*d*. Woodcuts.]

AD. 1854, October 28.—N° 2296.

MUMBY, GEORGE.—(*Provisional protection only.*)—" Improve- " ments in reservoir penholders and other writing apparatus." " These improvements consist, firstly, in the application of a tube, " composed of metal, glass, or any other suitable substance, of " the shape required, and which by the use of an elastic or " other material is made to fit accurately to the lower end of a " quill, metal, or elastic tube, for the purpose of directing the " flow of ink to the pen whilst in use. This tube may also be " made as a screw or otherwise, having one end formed as a " stopper to prevent the ink escaping." Secondly, in " the applica- " tion of a barrel of a quill as a reservoir for ink in combination " with the tube above described, and the employing its elasticity " to keep up a constant supply of ink to the nib of the pen." Thirdly, in " the application of an elastic substance to the inside " of a metal tube, having suitable openings made in it, and serv- " ing as a reservoir for ink for the purpose of supplying the pen " (used in conjunction with the tube above mentioned) with ink " when required ; or this tube may be altogether formed of a " *suit*able elastic material. The reservoir penholder is fitted for " *use by dropping* ink in at the lower end of the quill or tube,

" (or upper, if required), the small tube having been previously " removed. When about three parts full, fix the small reservoir " tube in its place, and make it fit perfectly tight;" and pressing the quill or elastic tube by the fore-finger or thumb, or by both, will cause the ink to flow to the pen.

[Printed, 4*d*. No Drawings.]

A.D. 1854, November 17.—N° 2441.

ASPREY, CHARLES.—" Improvements in handles, particularly " applicable to dressing cases, dispatch boxes, writing cases, and " other similar articles." The object of this invention is to provide " a handle, composed of two flaps or parts, one opposite the " other, which, when not required for the purpose of carrying the " article, or pulling out a drawer, or other similar purpose," fold down " into hollows or channels made for their reception, and lie " flush with that part to which they are fitted; and when required, " the two flaps of the handle are raised, and offer a large and " comfortable hold." The apparatus is composed of a surface plate, two flaps, and certain mechanism. The plate is cut with two channels of the same shape and size as the flaps. The flaps are secured to the plate by pins in each end, upon which they are free to turn. Two steel wires are firmly fixed at one end into sockets on the back of the plate, and at the other end to the flaps, " but with a certain amount of twist, so that when the flaps are " up, this twist in the wire acts as a spring to keep the flaps " closely together." The pressing down the flaps into the channels " twists the wires still further, and makes it necessary to " hold the flaps down by catches," which are two studs or pins projecting from the extremity of two levers. These levers are on the side of the plate opposite the sockets; they form an arch, move on centres fastened to the back of the plate, are bevilled at the ends which meet, and bear upon the end of a short lever which is hinged at one end and conically shaped at the other. The short lever is depressed by a stud which passes up through the plate, and when depressed it acts as a wedge upon the ends of the levers, thereby releasing the catches and allowing the flaps to fly up and form a handle. Two springs bear against the levers, so as to keep the catches in holes in the flaps when down. A forked lever acted upon by a spring may be substituted for the wires; this lever, whose ends bear against the ends of the flaps, is centred

upon a pin supported in a bracket which is screwed to the back of the plate. A spring presses against the tail of the lever and keeps the forked end against the ends of the flaps. The catches are acted on by helical springs and wedges as before described. The handle may be formed of a single flap, which flies open by pressing on a stud which liberates a spring. There may be other modifications; other springs may be used; they may be dispensed with, and the flaps raised by hand; the plate may be left out, and grooves cut in the surface to which the handle is fitted.

[Printed, 8*d*. Drawing.]

A.D. 1854, November 27—N° 2496.

GILLOTT, JOSEPH, the younger, and GILLOTT, HENRY.—"An improvement or improvements in metallic pens, and new "or improved machinery for the manufacture of metallic pens." The improvement in pens consists in hardening the points by heating them "to redness in a flame urged by a blow-pipe or "otherwise," then removing the pens from the flame, and allowing them to cool by simple exposure to the air or by directing a stream of air upon them. The machinery for the longitudinal and transverse grinding of pens is of the following construction:—Two grinders, one moving in a vertical, the other in a horizontal plane, are set in motion in any convenient manner. The pen to be operated on is fixed in a forceps attached to a spring at the end of a slide; this slide is situated on a disc or table rotating on a hollow vertical axis. An arm is fixed to the bed of the machine, and, when by the revolution of the disc the forceps is brought into a proper position, the end of the arm wedges between and separates the forceps so that the pen may be inserted. The disc "does not "perform a continuous rotation, but rests for a time," at the moment when the arm opens the forceps. The rest is effected in the following manner:—The disc is moved by bevil wheels; the upper one fixed on the hollow axis, the lower one loose on its axis which carries an arm and a click. The click engages with a ratchet on the lower wheel, communicating a rotatory motion thereto. During each revolution one end of the click comes in contact with a fixed stop, whereby the click is "raised and disengaged "from the ratchet." The motion of the wheel and disc is arrested *until the end* of the click escapes by the revolution of the arm, *when it again engages* with the ratchet and again communicates

motion to the wheel. The ratchet contains only four teeth, so that the wheel makes three-fourths of a revolution for each complete one of the arm and axis; but the number of teeth on three-fourths of the lower wheel is equal to the whole number on the upper one, so that the hollow axis and disc make equal revolutions with the axis of the lower wheel. When the hollow axis and disc resume their motion, the forceps, passing from the fixed arm, closes and holds the pen firmly, which is then brought to the vertical grinder and pressed upon it by the spring attached to the forceps. The position of the pen with respect to the grinders is thus effected:—as the disc revolves, a roller is brought against the curved faces of two guides (which can be accurately adjusted by means of screws), and the slide is forced back on the disc "to such "a distance as suffices to bring the pen with sufficient pressure "upon the grinders." The return motion of the slide may be made by a spring of vulcanized caoutchouc. The removal of the pen from the forceps is caused by a spring fixed upon and travelling with the slide, one end entering a slit in the forceps. There is a disc fixed on the top of a stationary rod which passes through the hollow axis and is fastened to the bed of the machine; that portion of the disc which is opposite the arm "is cut away in the "form of a tooth," so that when by the revolution of the disc the spring is brought under that part (the forceps having been previously opened by the arm) it "suddenly rises, and forces the "pen violently out." The pen is thrown into an arched channel and falls into a box underneath. By making the disc larger "several carriers or forceps may be placed thereon, and several "pens may be operated upon during each revolution of the disc."

[Printed, 6*d*. Drawing.]

A.D. 1854, November 27.—N° 2497.

FONTAINEMOREAU, PETER ARMAND LE COMTE DE.—(*A communication.*)—"Improvements in the construction of ink-"stands." For a description of this inkstand the reader is referred to abridgment 1192, dated May 30th, 1854, when provisional protection for the same was granted to Francis Mordan. In this specification the action is described:—The aperture for filling is to be closed air-tight; the stop cock is to be opened by one hand, whilst the ball is pressed downwards with the other, care being taken to close the hole in the top of the ball; "the

" air within being thus compressed forces the ink from the " reservoir into the bowl. When there is a sufficient quantity of " ink in the bowl, the stop cock is turned back;" on opening the cock the compressed air escapes through the hole in the ball, " and " the ink returns to the receiver by its own gravity." This inkstand may be constructed without standard or cock; the reservoir stands in a dish; on the side opposite to the dipping cup is a hollow projection to which is secured one end of a vulcanized india-rubber tube; the other end is soldered to a vulcanized rubber ball.

[Printed, 8*d*. Drawings.]

A.D. 1854, December 7.—N° 2568.

PHELPS, JOSEPH.—" Improvements in apparatus for damping " postage and other stamps, labels, and like articles." This invention comprises a stand, reservoir, trough, and roller, which are combined as follows:—On the top of the stand is screwed a metal cover, and (cast in the same piece as the cover) a trough to hold the sponge or other porous substance. The trough stands at one end of the cover, and the reservoir at the other; they communicate by means of a pipe passing under the cover. In the pipe is a square-headed cock to regulate the flow of the liquid. Beneath the pipe is a lever, having its fulcrum at one end of the stand, and its handle " flattened out, so as to form a thumb " piece," projecting through a slot in the opposite end. In the lever is a slot, wherein moves a stud by which a crank on the square head unites the cock to the lever. A link on the lever connects it to a rod, which passes through the cover and a column (standing thereon between the reservoir and the trough), when it is bent round over the trough and formed into a fork supporting the spindle of a roller. The column is hollow and contains a helical spring, whose lower end presses against the bottom, and the upper end against a washer secured to the rod by a pin. The spring keeps off the roller from the sponge and sustains the lever in its raised position, thereby keeping the cock closed. A label is placed upon the sponge, and, the roller being brought down upon it by pressing upon the handle of the lever, is drawn across the sponge, whereby the lower surface is damped. A recess is made in one side of the stand for holding stamps, labels, &c.

[Printed, 6d. Drawing.]

A.D. 1854, December 11.—N° 2610. (* *)

EBERT, CHRISTIAN HENRY RICHARD, and LEVISOHN, LIPPMANN JACOB.—"Improvements in the mode of rendering "certain cases or receptacles extensible." These are causing "the back ends" of "pocket books, pocket cases, blotting "books," "receptacles" for "stamps, small papers and docu- "ments," &c., "portfolios, and the like, and the top and "bottom of portemonnaies and lady's companions," and the backs of "desks, and of any compartments therein, to be formed "by an extensible band or connecting piece, composed wholly "or partly of india-rubber, gutta percha, or other suitable elastic "material."

[Printed, 10*d*. Drawing.]

A.D. 1854, December 13.—N° 2619.

FONTAINEMOREAU, PETER ARMAND LE COMTE DE.—(*A communication.*)—(*Provisional protection only.*)—"An improved "inkstand." The inkstand consists of a reservoir and a dipping cup. The reservoir "is fitted at top with a piston, similarly to "apparatus for preparing aerated waters. The bottom of the "reservoir fits air-tight into the top of the cup, with which it is "put into communication by a narrow opening. The diameter "of the orifice is calculated so as to overcome the pressure of the "ink above, which is caused to descend in the required pro- "portion by pressing down the piston, and admitting sufficient "atmospheric air from without to overcome the equilibrium "of pressure within."

[Printed, 6*d*. Drawing.]

A.D. 1855, January 2.—N° 6.

BRITTEN, BASHLEY.—"A cheap and convenient method and "apparatus for obtaining a copy of writings, drawings, or tracings "in ink." The apparatus "consists of two pieces of stiff mill- "board, joined together by a leather hinge, like an ordinary "portfolio or writing case. On the outer side of one of the covers "is rivetted a thin flat steel plate, coated with zinc or gal- "vanized to prevent its rusting. The surfaces of the case must "be made very flat and even, and the inside should be lined with "cloth or other suitable material. Supplied with the case is a

" thin book of absorbent paper, called drying paper, and also a " few sheets of the oiled paper commonly used with copying " machines." The steel plate "should be thin enough (about " No. 21 on the wire guage) to yield slightly under the partial " pressure brought upon it, and to accommodate itself to any " unevenness of the surface it may be placed on." The method of using the apparatus is as follows:—" First, thoroughly wet the " thin copying paper, by brushing or sponging it over with " water; remove the excess of moisture by lightly pressing it " between the white drying paper; lay the writing to be copied, " with a sheet of the oiled paper under it, on the cloth surface " inside the case; place the moistened paper over the writing with " another sheet of oiled paper above; close the case carefully, and " place the whole on the floor; stand for a few seconds on the " steel plate, treading over the entire surface, and the thin paper " will acquire a perfect copy of the writing without the least dis- " figurement of the original." The patentee thus concludes, "I " wish it understood that I do not intend to confine myself to the " foregoing details, either as regards the materials I have men- " tioned, or the form of putting the same together or using them. " I reserve to myself the right to alter or modify them as I may " find desirable for the purpose intended."

[Printed, 4*d*. No Drawings.]

A.D. 1855, January 3.—Nº 12.

HARVEY, JOHN KEIR, and PEARCE, DANIEL.—"A calendar inkstand," consisting of " a calendar or system of calendars placed " vertically or horizontally in combination with an inkstand of " any form or design." Various combinations may be made in the arrangements of the calendars and inkstands, one of which is described as follows:—A column is attached to the bottom of an inkstand (inside), and is provided with as many flanged rings as the calendar may require. These rings rest on shoulders on the column and turn freely thereon. "In consequence of the " column being placed excentrically to the case, the flanges of " the rings in this instance project slightly beyond the outside " casing" through slots, and having milled edges "are easily " turned on their axis." The date, day, month, &c. are attached *to the rings* and exhibited through openings in the stand. The *inkholder is placed* in the hollow of the column. "It is not

" necessary that the flanged rings should project beyond the " inkstand, as they may be made of less diameter than the inside " of the inkstand," and be moved by any suitable means.

[Printed, 6d. Drawing.]

A.D. 1855, January 29.—N° 214.

WILKINS, JOHN.—(*Provisional protection only.*)—" An im- " proved mode or method of damping or moistening postage, " receipt, or other stamps, adhesive labels, the surface of paper, " and other substances." The instrument by means of which the damping is effected is composed of a stand, a reservoir, and a vessel in which the label is placed for damping. The stand, which may be of any material or any shape, " has an aperture or open- " ing of any form or size on each side," and may be provided with a drawer or box for holding a supply of labels. The reservoir is " a vulcanized india-rubber hollow ball or any waterproof " vessel;" it is placed inside the stand. The damping vessel is joined to the stand by a screw joint or otherwise, and to the ball by a tube, which passes through the bottom of the vessel into the ball. This vessel " contains a chamber or chambers, division or " divisions" (made of any material), " having a perforated plate " or bottom resting on the sides or bottom " of the vessel. The label to be damped is put into the chamber or into one of them, and by compressing the ball, water will be forced into the vessel, and the label will be sufficiently damped.

[Printed, 6d. Drawing.]

A.D. 1855, January 31.—N° 235.

WHITE, STEPHEN.—(*Provisional protection only.*)—" Improve- " ments in the manufacture of pencils or crayons." The inven- tion consists in preparing and compounding certain ingredients to form pencils or crayons, which shall make " a permanent impres- " sion not to be erased by caoutchouc, or any other such like " known means." The method of manufacture is thus described by the patentee :—" The cement for the paste is prepared by taking " two parts of the purest white olive oil soap, and one part of the " purest picked gum arabic, which are to be digested together " with twenty-one parts of distilled water, to be kept at a tem-

" perature of about 120 degrees Fahrenheit, in a suitable covered " vessel, with frequent stirring for some hours until perfectly " dissolved ; it is then to be strained through linen or fine muslin " cloth whilst still warm, so as to remove any impurities which " may be found." The colours principally to be manufactured are black, blue, green, and red or scarlet. " The materials or ingre- " dients which are used to impart the colour may be ground on a " porphyry slab as fine as possible, then conveyed to the mixing " table, the whole upper part of which may be made of ground " plate glass of about four feet six inches square, and the glass " should be imbedded on a layer of dry sand, at least two inches " thick, supported beneath by a plate of wrought iron one-eighth " of an inch thick, corresponding to the size of the glass ; the " wrought-iron plate should be supported by cross bars one inch " square, and placed longitudinally three inches apart, which bars " should be secured to a side frame of iron, supported by legs of " about three and a half feet high. The iron plate, sand, and " glass should be heated from beneath, by means of a series of " steam or hot air tubes, or a series of small gas tubes, with small " single jets regularly distributed beneath the iron plate, so as to " keep an extended and uniform temperature." The ingredients " should be thoroughly well ground and incorporated together " on the heated glass plate table, which should be maintained at " a temperature of 110 degrees Fahrenheit, until the whole mass " assumes a homogenous paste of the consistence of common " dough. The paste so prepared may then be moulded through " an ordinary screw moulding machine." The pencils or crayons " as formed in their soft state, on coming from the moulding " machine, should be placed on a metallic plate of lead, pewter, " or brass, having a series of half round grooves cut lengthways, " corresponding to the size of the pencil or crayon, and covered " with another exactly corresponding counterpart, screwed " together by clamp screws each side. The plates with the pencils " or crayons should be placed in a room regularly heated, and " the atmosphere maintained at an uniform temperature of about " 70 degrees Fahrenheit, for a period of four weeks at least to " dry ; when so dried, the crayons or pencils may be placed in " cedar wood cases, or used tubular in the ordinary metallic " pencil cases."

[Printed, 4*d*. No Drawings.]

A.D. 1855, February 10.—N° 320.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication from Professor Frederic Kuhlmann.*)—"Certain materials to "be used for cementing and painting, and also applicable to "printing and dressing or finishing fabrics." The materials are "alkaline silicates," or "several silicates with different bases." The silicate, which the patentee prefers to use, "as being the "most economical to prepare when it is applied as a solution, is "silicate of potash, which is or may be obtained by heating silica "during six or eight hours in a solution of caustic potash, having "a specific gravity of 1·160 about, the temperature being that "corresponding with a pressure of five or six atmospheres." Instead of potash he sometimes uses caustic soda. He employs "the silicious solution" in various ways (which are fully explained in the specification), amongst them "as the base of a most "unalterable writing ink." To manufacture this ink, "a liquid "of a brownish black" is obtained "by boiling pieces of old "leather with a solution of caustic soda or potash, and this "alkaline solution is then saturated with silica that is in a state "of jelly, and if a deeper black is to be given to the ink, the "carbonaceous ingredients of Indian ink must be added."

[Printed, 4*d*. No Drawings.]

A.D. 1855, February 24.—N° 410.

JOHNSON, JOHN HENRY.—(*A communication from Newell A. Prince.*)—"Improvements in fountain pens." This fountain pen is manufactured principally of hard vulcanized rubber, by preference "Goodyear's hard rubber." In the lower end of the reservoir a feeding tube is fitted, bored through its middle with a hole which is largest at its upper end. Near the bottom of the feeder "an aperture is made perpendicular to the bore thereof, from "which the ink issues to feed the pen;" within it is a thin flat spring whose upper end is wide enough to be wedged fast into the feeder, the rest being narrower than the diameter of the bore, so that it may vibrate freely by the action of the pen in writing. The lower end of the spring is bent at nearly right angles to allow it to project through the aperture and come into contact with the under part of the pen; the bent part is shaped into a conical plug, thereby closing the aperture when the pen is not in use. The pen is slipped in between the reservoir and the feeder, which is filed

away for its admittance. The reservoir is filled either by suction or by means of a piston; in the former case a cap is screwed on to the top of the reservoir; it has a small hole through its middle, and at the top is a thumbscrew, which is to be turned back before suction is applied. In the latter case a rod of about the same length as the reservoir moves a piston, which has a conical top to enter a conical seat in a cap screwed on to the top of the reservoir and bored through with a hole for the passage of the rod. A cap protects the pen and its feeder.

[Printed, 8*d*. Drawing.]

A.D. 1855, March 16.—N° 591.

HILL, WILLIAM.—"Improvements in metallic pens and pen-"holders, and in ornamenting metallic pens and penholders." The invention, as regards pens, consists in giving to the blanks "such forms between that portion which is held by the holder "and that portion which constitutes the point of the pen, that "the said intermediate part may be folded or coiled," whereby great elasticity is given to the pen, "and where necessary an "oblique direction and oblique elasticity is given to the point of "the pen." The patentee claims to make eight sorts of pens differing in some respect from each other; four of these, when in blank, consist of body, point, and one or two strips of metal between, and the difference when made into pens lies in the manner of folding or twisting the strip or strips. In three, which have an oblique action, the blank consists of body, neck, and point, the point or neck and point not being in the same line as the body, and the difference in the pen depends on the position given to the neck and point. In another pen, whose blank is of the ordinary shape, the point is raised up, and the slit opens "obliquely into the piercing." In a holder and pen made according to the patentee's construction, the pen is shorter than the ordinary pen, and provided at its top with a spring catch. The holder is a "nearly semi-cylindrical plate of metal," having a longitudinal slot for the pen, two lateral oblique slots for greater elasticity, and two ears on its lower part. The catch enters the slot, and the ears bent inwards keep it firm. "By sliding the pen "to a greater or less distance in the holder any desired degree of "yielding may be secured." The body of the holder "may be "*inserted in the* common rigid penholder, or made into a hollow

" cylindrical form, and a stick inserted therein." The ears may be on the shoulders of the pen, the body inclining upwards towards a point, so that the holder may be inserted between the body and ears. A quill cut somewhat into the shape of a pen may be used as a holder to the last described. The patentee claims the invention of five sorts of holders. The first has " between that " portion of the holder which is attached to the stick and that " portion in which the pen is inserted coils or folds, such as herein- " before described " with regard to pens. The blank from which the second is formed has two pieces cut out, one on each side, about half-way down, and two pieces (somewhat like the legs of a triangle) cut out in the lower half. The upper part forms the cylinder into which the stick is inserted, the central parts are curved upwards, and the lower parts are " curved or bent down- " wards until their edges meet." The third consists of a metal tube with the lower end pen-shaped, and a piece of metal some- what like an H, with the band bent round, and the uprights turned over into the interior of the lower end of the tube. The fourth is a quill having the lower part pen-shaped, and a metal plate placed in the interior, and kept firm by an arm which is bent over the back of the quill, the end of the arm being turned inwards. The novelty of the fifth consists in cutting the plate and arm out in the same piece as the blank, and turning them over as last described before the blank is rolled into a cylindrical form. The patentee ornaments metallic pens and holders by plating or coating them with silver or tin; or with copper, and then heating them " until the coating of copper assumes a bronze " or purple colour." Or he first coats them with copper, and then treats them " with any solution of silver or tin, which (with- " out the agency of electricity) will deposit a layer " thereon. He also ornaments pens by attaching metallic or other labels by means of ears turned over the edges of the pens.

[Printed, 10d. Drawings.]

A.D. 1855, March 19.—N° 617.

TERRY, ALEXANDER ROBERT.—" Improvements in apparatus " for copying letters and other documents." The object of this invention, to use the words of the patentee, " is to combine appa- " ratus with the covers of a book (composed of suitable paper) in " such manner that the act of closing of the covers of a book

" shall be the means of copying a letter or letters or documents " inserted between the leaves of such book. For this purpose at " the outside of each cover of a book I apply and fix a metal " frame: these two frames are, when the book is closed, connected " together by links which are attached to the frame of one cover " of the book, and they pass on to projections on the frame of the " other cover of the book, and in so passing on and connecting " the two frames together, the links cause the two frames to be " drawn tightly together, and the paper between the covers is " tightly compressed." The links are attached by pin joints, and their shape, as well as that of the book frames, may be varied without departing from the invention.

[Printed, 8*d*. Drawing.]

A.D. 1855, March 22.—N° 632.

MORRISON, JOHN.—" An improvement or improvements in the " manufacture of metallic pens." This invention relates to that stage of the manufacture of pens at which the grinding near the point and on the back, " called the straight and cross grindings," takes place; and it consists in performing the said grindings in the sheet metal from which the pens are made, or in grinding the blanks after they are cut from the sheet, and before they are bent into pens. In a machine for carrying out this invention three grinders are required, the third, which produces the cross grinding, being situated in a plane at right angles to the plane of the other two; and, as the metal operated on contains a double set of blanks, there must be a straight grinding on each side of the cross one; this is effected by throwing the first two grinders " alternately " into and out of action." The grinders are carried by forks turning upon centres, and have motion communicated to them by pulleys situated upon their axes. The forks are adjusted by screws, and they are also capable of turning on pins to permit of the accurate adjustment of the face of the grinders to the surface of the sheet of metal. The sheet " is fed to the machine " under two rollers and between two guides, one of which is " moveable to " accommodate sheets of metal of different widths." It is carried to the first grinder by a second pair of rollers; thence to the second and third, and passes out of the machine between a third pair of rollers, being supported on its way by a roller placed under *each grinder; and* to prevent it from " buckling " during its

passage it is further supported by endless guide cords, two working over and two under it. These cords are guided in their course by pulleys, and are received into grooves made in the second and third pair of rollers, whilst a proper tension is preserved in them by means of weights. The sheet bears against a fixed guide during its progress under the grinders, and spring side guides may be applied to keep it up to its bearing. The second and third pair of rollers are driven by pulleys on the axis of the lower one in each pair. The rollers under the grinders turn on axes at the end of one of the arms of the forks, and both rollers and grinders are adjusted by means of screws, one working through one extremity of a horizontal arm on the top of the uprights fixed on the base of the machine, the other passing through one arm of the fork, both screws bearing on that arm of the fork which carries the axis of the roller; a spring presses against the last named arm. When the first and second grinders "are depressed to their proper "position they are bound together," and their positions thereby fixed. The alternate action of the first and second grinders is effected "by making flutes at regular intervals on the rollers" underneath them, and "gearing the said rollers to the feeding "rollers." Or they "may be alternately depressed by causing a "comb or other mechanical agent to press upon the arms carrying "the said grinders, the return motion of the said arms being "effected by the springs under them."

[Printed, 8*d*. Drawing.]

A.D. 1855, April 7.—N° 771.

GERNER, HENRY.—(*Letters Patent void for want of final Specification.*)—"Improvements in polygraphic, or writing and "drawing apparatus." The following is the description given by the patentee of his invention:—"One form of my improved "apparatus consists of a wooden frame for any required size of "paper, each sheet placed on plate glass, ranged like a series of "shelves, and provided with a spring clip or bar to hold the top "edge of the two or more sheets of paper so placed by the single "action of one screw nut or button; two or more small ink "glasses are placed at the top right-hand side of the frame, one "above another, about level with each tablet for writing on. At "the upper edge of the front right-hand corner of the frame I "insert a swing bracket, bored vertically at its other end to

" receive the bent end of a lever jointed about the middle, and " thence connected to a forked lever, having two or more writing " tablets, and carrying a pen at the end of each prong fixed in a " slit tightened by a sliding ring. A handle or director is fitted " to the uppermost prong by a broad flat strip of metal attached " to the handle by a swivel stiffened by a spiral wire spring, so " that when writing the handle has a certain degree of play, " while the pen itself retains a constant position within its carrier " bar. The pens have a strip or tongue of metal or their upper " surface, fastened at the top end only, slightly bowed, and " nearly touching at the tip of the pen, producing a capillary " action. In using the apparatus the pens all act alike and in " concert. Another form of my invention consists in providing " a larger single writing surface, on which two or more sheets of " paper can be placed beside each other, and all written on at " once; for which purpose I attach two parallel bars to four " connecting levers, two of which swing to the frame by their " ends, bent at right angles, working in sockets, and the front " parallel bar carries the pens in slits tightened by sliding rings, " but one end of the bar has only a screw regulating pin, and " moves over the glass surface, merely acting as a guide or " regulator."

[Printed, 4*d*. No Drawings.]

A.D. 1855, April 16.—N° 837.

BEARD, GEORGE.—" An improved label and stamp setter." The apparatus which composes this invention is of the following construction :—On a sole plate stand a pillar, a water box, and a stamp box, all secured by screws and nuts. The pillar supports on its top a double-arm guide-piece which is held firm by a screw and nut. The water box is provided with a sponge which is connected to the under part of a cushion in the lid. A plunger with a screw nut at its top and a platen at its bottom works through an orifice in one arm of the guide over the water box; it is prevented from rising too high by a shoulder, and its course is regulated by one side of the box which rises above the others. On the upper side of the guide is a collar between which and the screw nut is a helical spring coiled round the plunger. A similarly furnished plunger (save that it has not a shoulder) works through an orifice in the other arm of the guide over the stamp box. To

its platen "is attached a piece of metal which depends therefrom, "forming a guide for its proper descent, and is used in locking "up the same, for which purpose a hole is provided therein, "serving as a staple for the lock bolt." Passing through the opposite side of the platen is a small screw, "the point of which "is intended to mark on the envelope, letter, &c., the extreme "limit of one postage stamp, &c., so that it may be known where "to place any others." The stamp box is in two parts, the upper sliding over the lower which has a lid whereon the labels are laid with their gummed surfaces uppermost. The upper part is connected to the lower by a bar which moves through slots therein; and to the bar is fastened one end of a spring "coiled round a "prolongation of the head of the screw" which secures the box to the plate. Round the upper part is a band with space left on one side for the admission of the end of the metallic guide, so that the stamping apparatus may be locked up. The lock is close below the band. The corner of the letter, &c., being placed on the cushion, the damping is performed by bringing down the platen; the damped part is then placed on the stamp box, and pressure from the other platen affixes the uppermost stamp.

[Printed, 8*d*. Drawing.]

A.D. 1855, April 19.—N° 863.

LEES, THOMAS.—"An improvement or improvements in me-"tallic pens." "My invention," says the patentee, "consists "in the use of malleable cast-iron for the manufacture of pens. "By malleable cast-iron, I wish it to be understood that I mean "such cast-iron as becomes malleable after having been heated or "annealed in contact with powdered hæmatite or peroxide of iron. "In carrying my invention into effect, I cast into ingots any of "those varieties of cast-iron which are capable of being annealed "or rendered malleable by being heated in contact with hæmatite "or peroxyde of iron. I anneal the said ingots or render the same "malleable according to the method well-known and commonly "practised in the manufacture of articles of malleable cast-iron. "After annealing I roll the said ingots into sheets of a thickness "suitable for the manufacture of pens therefrom. During the "annealing of the ingots, the cast-iron is made soft or malleable, "and during the rolling of the same a partial hardening is effected "on the iron, which renders it elastic, and fitted for the manu-

" facture of pens. In converting the said malleable cast-iron into " pens, any of the machines may be employed which are or may " be used in the manufacture of steel pens."

[Printed, 4d. No Drawing.]

A.D. 1855, April 19.—N° 875.

JOHNSON, JOHN HENRY.—(*A communication.*)—" Improve- " ments in the manufacture of articles of hard india-rubber or " gutta percha, or compounds thereof, and in coating or covering " articles with the like materials." The patentee enumerates articles (too numerous to be mentioned in an abridgment) to be made of the above-named materials; among them are inkstands, penholders, and pens, but without any intimation as to the method of manufacturing them specially. Respecting the preparation of the materials and the mode of moulding, reference is made to the Specifications of Letters Patent previously granted to Thos. Hancock, Chas. Hancock, Wm. Brockedon and Thos. Hancock, Wm. Johnson, and to himself. The articles are moulded while in a soft state and are then submitted " to a high degree of heat in steam " heaters or to the action of a sulphur bath;" the moulds are, by preference, of porcelain, glass, metal, or gutta percha. The heating process may be applied while the articles are in the mould or after they have been taken out. The materials may be incorporated with sulphur before moulding, " or the pure gums " may be dissolved in spirits or carburet of sulphur, and the " moulds filled with the solution, or pure gums may be used and " submitted while in the mould to the sulphur bath." In other cases the materials may be vulcanized in sheets or other forms, and certain articles may be made therefrom by pressing, " similar " to the process of embossing leather." The articles may be colored or variegated " by spreading the dust of hard india-rubber " which contains coloring matter before adding the scraps or " parings described by the said Wm. Johnson in his Specifica- " tion." Metals, wire, or iron tubing, are covered with material which is " submitted to the process of hard vulcanization in a " sulphur bath;" or " the articles may be plunged into a solution " of india-rubber or gutta percha formed by the carburet of sulphur " or into any other solution of india-rubber or gutta percha and " then vulcanized hard."

[Printed 4d. No Drawings.]

A.D. 1855, April 30.—N° 970. (* *)

DÉPIERRE, PIERRE.—(*A communication.*)—"Improvements in "dyeing" and in the "manufacture of ink."

"As a substitute for cream of tartar in dyeing wool, a decoction "of the female flowers of the alder" well powdered is employed.

The same fruits will also serve to dye cotton, silk, and mixed fabrics black after such fabric has been subjected to mordanting.

"To restore to all kinds of silk the whole or a portion of the "loss which they have undergone in weight by the cleaning "process, and to cause them to take any colour required in dyeing, "they are passed through a decoction of alder flowers or fruit, "clarified."

"The alder flowers will also serve to make good ink by the "usual processes, and to furnish all the salts which can be obtained "from the finest gall-nuts, the process being the same."

[Printed, 6*d*. No Drawings.]

A.D. 1855, May 2.—N° 984. (* *)

HARROLD, FREDERICK WILLIAM.—(*A communication.*)—"An "improvement or improvements in the manufacture of frames of "slates used for writing on." This consists in making these frames "of one strip of wood, cane, gutta percha, metal, or other "suitable substance." These are first bent over a model of the size and shape of the slate to be framed. Wood must be first softened by steam or otherwise. One joint only is required, and it is placed at the top or on the side of the frame instead of at the corner.

[Printed, 6*d*. Drawing.]

A.D. 1855, May 17.—N° 1113.

DAWSON, THOMAS.—"Improvements in cases for containing "pen, ink, and stamps." The case is made in two parts, which are united together "by means of a groove and garter pin joint," so that either of them may be turned round while the other is held stationary. The lower part serves as a case for "the ever "point," which is made separate, but tightly fitting, and is turned into the case when not required for use. The upper part contains a receptacle for postage or receipt stamps. A wire is fastened to the top of the lower part, and a convex spring is screwed at each end to it. Both case and spring are slotted, and the stamps are intro-

duced by inserting an end into the slots and winding them in by urning the lower part. A slide covers the outer slot. Above the receptacle is a reservoir for leads, and above this the upper part is cut on the inside with a screw thread, into which is screwed a double threaded piece ending in a pen. This piece has a milled collar in the middle for screwing it into or out of the case, and to it is screwed a hollow top, which serves to hold a supply of ink; there is a small air-hole immediately above the collar. This arrangement of the various portions may be modified. The receptacle may be placed higher up; the lower part may be longer so as to allow of the ever point sliding in and out; and the reservoir may be in the top of the ever point, access to the leads being obtained by unscrewing a cap thereon. Or the slot for the stamps may be in the wire instead of in the spring, and the whole case may be constructed "of a few telescopic joints, so that all the "parts may be withdrawn into the head of the case, when the "case will resemble a seal."

[Printed, 6*d*. Drawing.]

A.D. 1855, May 18.—N° 1120.

WARÉE, BENOIT THEODORE.—(*Provisional protection only.*)—"A new or improved apparatus for sharpening pencils." The patentee describes his invention thus:—It "consists chiefly of a "suitably-cut straight, sectorial, annular, and wheel-like file, to "which a respectively straight reciprocating motion, or a circular "to-and-fro motion, or (for the annular wheel or barrel file) a "continuous rotary motion is imparted with respect to the pencil "to be sharpened. When a straight file is used, I form dove-"tail slides in a suitable wooden box or frame for the file to be "slided to and fro; the pencil is supported by a V or notched bar "in front above the file, and by a center or adjusting screw at "the hinder end, the screw being raised above the notched bar "in such manner that the point of the pencil meets the file at "the angle required. The pencil holder must also have a collar, "and be capable of being lengthened as it wears, so as always to "present the same angle to the file when it is being sharpened. "The pencil being thus laid down, a reciprocating motion is im-"parted to the straight file, and the pencil turned all the while "about its axis. The V bar is adjustable, so that every point of "*the file may* be applied in turn, and the file worn equally

" throughout. When a sectorial file is used, the file is fixed " down upon a suitable plate, and an angular to-and-fro motion " given to the pencil, which is suitably inclined, as before, and " supported. When an annular file is employed, the file is fixed " upon a disc, which by means of a winch handle is set to rotate, " whilst the pencil or crayon is turned and supported at a suit- " able angle, in a way similar to the one first described above. " A similar arrangement may also be adopted with regard to a " vertical wheel, which has a file cut on its circumference."

[Printed, 4*d*. No Drawings.]

A.D. 1855, May 24.—N° 1172.

RAWLINGS, CHARLES.—" Improvements in writing desks." This invention relates to " the combination of envelope and " paper cases with the ordinary portable writing desk." The body, inkstands, and pen tray are made and placed somewhat similar to those of an ordinary desk; there is the usual receptacle for papers in the body with a flap over it, and a drawer underneath extending from end to end. The cover " which forms the " continuation of the writing slope is simply a thickness of " wood," and its inner face, as well as the face of the flap, is covered with leather or cloth. " It is curved and otherwise formed " to give it a handsome appearance, as also the ogee front," into the hollow of which the edge of the cover fits somewhat closely when the desk is open; " the whole is hinged, jointed, and fitted, " as well understood in cabinet work." Under the pen tray are one or two secret drawers; these are got at by the removal of a partition or facing board, " which is held at one end in an under- " cut recess or dovetail, and at the other by a spring catch." This catch " is released by passing the finger up from the drawer " space immediately under the right-hand ink," to do which the drawer must be partly opened. When the spring is released, the partition flies out into the body. The paper and envelope case is placed at the back of the desk; it is divided into compartments, and has a hinged circular top or fall. This top is divided into two parts, which are hinged to each other, the larger part covering the case, the smaller one the inkstands and pen tray, so that the smaller may be opened separately. In order to lock both parts of the desk at one operation, a hook-like catch takes into a

notch in the edge of the pen tray cover. This catch, fixed at the bottom of the desk, has a constant tendency to spring back from the notch, but the tendency is overcome by a recess, faced with a brass plate, in the edge of the cover, which receives the back of the catch and forces it into the notch. The lock is boxed in the cover, and the bolt shoots into a mortise cut in the edge of the pen tray cover.

[Printed, 6*d*. Drawing.]

A.D. 1855, May 25.—N° 1185.

POULLAIN, Joseph Hippolyte.—" A new or improved pen-" holder." The object of this invention is the construction of a penholder, which retains " the pen in a firmer position when " inserted," and which prevents it " from staining the table or " other surface when laid thereon immediately after being used." The metal blank from which the holder is made has on two opposite sides three slits, the parts between which, when the blank is rounded into a tube, " are bent towards the inside, in such " manner as to form a sheath for the hind part of the pen." Two slits lower down increase the elasticity, and the notched end " is flattened out so as to form a polygonal flange or collar, which " is for holding the pen above the table." The collar may be made separately, and placed on any kind of holder by any mode of fastening. Instead of the sheath, " a split handle may be " inserted in the tube in such a manner, that, when the pen is " adjusted, the two parts of the split handle come near and act " as a spring." A piece of metal, with a projecting stud, and " turned down on each side," may be made to slide in the split handle, serving to drive out the pen from the holder when required. Again, the holder may be made " of a rolled or " drawn tube," and afterwards cut, as may be required, by tools; and a spring may be introduced into it to hold and secure the pen, yet leaving it a certain degree of elasticity. The spring is attached to the tube by passing one end through a square hole in the upper surface near the collar; the other end must be rounded to leave the pen a free passage between it and the holder. The patentee adds, " to this improved model I may also adapt a thumb piece, " as I have already described, for driving the pen out of the " penholder."

[Printed, 6d. Drawing.]

A.D. 1855, May 31.—N° 1245.

SACHS, HERMANN.—(*Provisional protection only.*)—"An improved construction of fountain pen." The object of this invention, to quote the patentee's own words, "is to construct a "simple and cheap penholder which will provide a continuous "supply of ink to steel and other pens. This I propose to effect "by making the stem of the penholder a reservoir for ink. The "top is closed with an adjustable cap, which when raised will "admit air to the reservoir, and allow the ink contained therein "to flow more quickly out at the other end. To the bottom of "the stem a hollow plug is fitted, and into this plug is screwed "what may be termed the penholder proper. This piece is "furnished with a shield at its upper end, below which holes are "made for conducting the ink from the reservoir to the interior "of the penholder. The shield when the holder is screwed up "will shut off the supply of ink, and, according to the distance "it is from the bottom of the stem, so will the supply be increased "or diminished. An opening is made in the clip of the penholder "to permit of the discharge of the ink on to the pen, the amount "of which discharge will be determined according to the requirements of the writer by the means already indicated."

[Printed, 4*d*. No Drawings.]

A.D. 1855, June 11.—N° 1333.

JOHNSON, JOHN HENRY.—(*A communication from Samuel Barbot and Louis Charles Riottot.*)—(*Provisional protection only.*)—"Improvements in metallic pens." The description is quoted from the Provisional Specification. "This invention relates to a "peculiar construction or arrangement of metallic pens, whereby "they are rendered more retentive of ink and less liable to blot or "tear the paper in writing. The improvements consist in forming "a cheek on each side of the nib by bending over the sides to a "vertical or nearly vertical position, thereby imparting a trough-"like shape to the under side of the pen, which thus serves as a "reservoir capable of containing a greater quantity of ink than "can be retained in an ordinary metallic pen. The pen is split "in the usual manner for the purpose of giving elasticity to the "nibs."

[Printed, 4*d*. No Drawings.]

A.D. 1855, June 15.—N° 1371.

MORRELL, GEORGE FREDERICK.—"An improvement in ink "bottles or ink vessels." This invention has for its object "to "construct ink bottles or ink vessels of such a form as to render "them less liable to injury when containing ink and packed, and "also more convenient for use as inkstands than ordinary ink "bottles in which ink is sent from place to place and sold." The bottle, of earthenware or glass, may be of any shape, but it is desirable that the external form be such as will admit of the largest number being packed in a given space. "Each bottle is made "with only one opening or internal and descending neck into it." The upper edge of this neck should be level with, or only a very little above, the upper parts of the bottle, and the upper parts may be made slightly concave. If the neck "be made to protrude "to some extent outwards the bottom of the bottle may with "advantage be made somewhat concave outwards, so that, in "packing and piling one ink bottle on another any portion of the "neck of one which protrudes, and also its cork or stopper, may "(by reason of such form of the bottom) come within the concave "bottom of the next bottle above." In the descending neck is a small airhole to facilitate the filling of the bottle through the neck.

[Printed, 6*d*. Drawing.]

A.D. 1855, July 14.—N° 1584.

DERRIEIY, JOSEPH JULES.—(*Provisional protection only.*)—"Improvements in machines for manufacturing lozenges, wafers, "or pastilles of pasty materials." The patentee states that "the "invention relates to a mechanical arrangement for manufactur-"ing lozenges, wafers, and pastilles of pasty materials, and "consists of a series of rollers between which the paste passes for "bringing the same to the required thickness, after which the "paste is carried forward between a revolving cylinder and a "movable sliding piece, which latter is provided at its under "side with suitable protruding dies, placed opposite to punching "plates fixed flush on the outside of the cylinder, and in which "other dies corresponding in number with those of the sliding "piece, and situated exactly opposite to these latter, are made to "*move* from the inside of the cylinder towards the outside by "*means of suitable* springs in the interior of the cylinder; this

" latter and the rollers are made to revolve, and the sliding piece " to move, by suitable gearing and prime mover; and at each " time the punching plates come in contact with the paste and " opposite the protruding dies of the sliding piece, these latter cut " out a lozenge, wafer, or pastille from the paste between these " dies and the movable dies of the cylinder, which latter hereby " are pushed partly in the interior of the cylinder, and as this " latter continues revolving, the thus formed lozenge is thrown " off and falls on a receiver, whereas the superfluous parts cut off " from the paste fall on a revolving apron."

[Printed, 4*d*. No Drawings.]

A.D. 1855, July 23.—N° 1665. (* *)

GOODYEAR, CHARLES.—(*Provisional protection only.*)—" Im- " provements in bands or straps for confining or holding papers " or documents and other articles where india-rubber is used." It consists " of making bands or straps for confining or holding " papers or documents, or other articles, partly of vulcanized " india-rubber, where it is desired that the bands or straps should " be elastic, the other parts of the bands or straps being composed " of india-rubber combined with fibrous material; or such other " parts may be made of the hard compounds of india-rubber."

[Printed, 4*d*. No Drawings.]

A.D. 1855, July 24.—N° 1676. (* *)

WOOD, BENJAMIN.—" An improved preparation of colouring " matter for the manufacture of ink, artists' colours, and for " other purposes for which such colouring matter may be " applicable."

The ink, which will not corrode metal pens, is produced from cochineal. Common carbonate of soda (9 oz.) is dissolved in water (27 quarts), to which is added about 8 ounces of citric acid, and when this solution has been brought to the boiling point, 1½ lb. of cochineal is put in and the boiling continued for about one hour and a half, after which the liquor is strained and allowed to settle and cool. The clear liquor is boiled up again, and about 9 ounces of common alum added thereto, and the mixture kept boiling for five minutes, after which the liquor is drawn off into coolers and allowed to precipitate, which it will do as the liquid gradually cools. When the precipitation has finished, the super-

natant liquid is drawn off, the precipitate filtered so as to drain off as much of the liquid as possible, and washed in distilled water to remove any acid contained in it, drained and dried. If required in a liquid state, it is subjected to a solution of caustic ammonia, which dissolves it.

In order to produce a red ink with the above, distilled water is added to the solution of coloring matter above described. To prevent the ink from decomposing or becoming mouldy, a few drops of essential oil of cloves or oil of creosote are added.

[Printed, 4*d*. No Drawings.]

A.D. 1855, July 25.—N° 1690.

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—"Improvements in vessels for containing and preserving fluids." This invention relates, 1. to the construction of vessels "which "permit of the withdrawal of liquids therefrom without admitting "air into contact with the remaining liquid;" and 2. to improved means of constructing inkstands, whereby "the undue evaporation "of the ink" is prevented. 1. An ornamental vase is fitted with a removeable cover; within the vase is a cylindrical case wherein works a piston "provided with a central knob to raise it "and a lever valve to admit air below the piston" when required. The case is permanently secured to the vase; or the latter may be dispensed with, and the case may be mounted on a foot or pedestal; in communication with the case is a tap. The piston, being properly packed, will prevent the air from passing down to the liquid; and as the liquid is withdrawn, the pressure of the air will force the piston down; "the piston might be weighted to "insure its descent immediately on the turning of the tap." In some cases it is proposed "to increase the capacity of a vessel of "a given diameter" by constructing it "on the telescopic "principle, making the joints air tight." 2. Three arrangements of inkstands are described; in the first the ink chamber has "a "flexible bottom" which "permits of the capacity of the cham-"ber being increased or decreased;" it is supported on "a loose "stand," the face of which is concave. In the upper part of the chamber is a dipping cup; and a tube, forming a continuation of the cup, reaches nearly to the bottom of the chamber. The vessel is filled through the cup, "the air in the vessel being "*allowed to escape by* a vent in the upper part;" the vent is

afterwards to be closed air tight. The second, "constructed on "the well-known fountain principle," is a cylindrical vessel fitted with a piston, the rod of which is hollow, "attached to the piston "by a swivel joint," and carrying at its upper end a dipping cup; on the rod is a screw thread "to work in a thread tapped in the "centre of the cover." The third is composed of "two con- "centric cylinders" mounted on a pillar and stand; the inner one, by preference of glass, is packed with a ring of cork or other suitable substance; the outer one, preferably of metal, has an aperture corresponding to that of the inner one. When the ink-stand is in use, the apertures coincide; when not in use, the inner cylinder is turned on its axis and the aperture is closed.

[Printed, 10*d*. Drawing.]

A.D. 1855, July 28.—N° 1724.

DAFT, THOMAS BARNABAS.—(*Provisional protection only.*)—"Improvements in inkstands." This invention, says the patentee, "has for its object improvements in inkstands, and they "consist of means of acting on a flexible air-tight cover or dia- "phragm, over or to an opening into the upper part of the ink "vessel. For this purpose a moveable cover is hinged to or near "the dipping cup, so as to cover it when the inkstand is not in "use, and a flexible elastic cover or diaphragm is fixed over an "opening into the ink vessel. The moveable cover of the "dipping cup, in folding back to open the dipping cup, presses "on to the fixed flexible cover or diaphragm, and depresses it "into the ink vessel, and thus causes the ink therein to be dis- "placed and to rise into the dipping cup; or in place of the "cover of the dipping cup folding back, and thereby pressing "on the flexible elastic cover or diaphragm, the cover may be "arranged to slide back and press on the elastic flexible cover "and to depress it. The moveable cover of the dipping cup "when moved back is retained back by a spring or other catch."

[Printed, 4*d*. No Drawings.]

A.D. 1855, July 30.—N° 1726.

PEACOCK, JAMES, and BARRY, HENRY HEATON.—(*Provisional protection only.*)—"Improvements in instruments for "making copies of writings simultaneously with the originals." This invention "relates to an instrument constructed on the

" principle of the pentagraph, in which one pen is held and used " by the writer in writing the original, but so connected with a " second pen, or a second and third, as to produce one or more " copies or duplicates simultaneously therewith. For this pur- " pose we provide a suitable table or surface to write upon, which " is fitted with two sockets, forming joints for the ends of two " wires or rods placed therein. The other end of these wires is " connected by a wire of the same length as the distance between " the sockets. At these joints two other wires are connected, " which at their opposite extremes carry a bar parallel to the first " connecting wire; to this bar the writing instruments are " attached. The pen held by the writer is placed mid length of " this bar, while the pens to make the copies are placed one at " either end. If only one copy is required, the pen at the right " hand end of the bar is replaced by an adjusting pin, which " moves on and sustains the bar from the writing surface. The " pens are free to move in any direction, but are so controlled in " reference to each other by the jointed wires, which maintain " a system of equal angles, that any writings performed by the " pen held by the writer are simultaneously described by the " other pen or pens of the instrument, thus producing one or " more copies or duplicates at the time of writing the original. " The nibs or pens are fixed rigidly in the carrying bar, but the " holder of the pen, to which the attention of the writer is princi- " pally directed, is attached by a universal joint, so that nearly an " equal amount of freedom in the use of the pen is maintained, " as in ordinary writing. The table used with this instrument is " provided with two or more inkstands, so situate that the act of " dipping the primary pen dips the others at the same time. " Instead of making the copies on the same plane, the instrument " may have two or more writing tables or surfaces, one above the " other. " The penholder in this case consists of a horizontal arm " for each pen, projected from an upright main bar, carried by " the combined guiding rods. The upper pen is used by the " writer, while the others below make the copies required."

[Printed, 4*d*. No Drawings.]

A.D. 1855, August 1.—N° 1746.

GLUKMAN, Leon.—(*Provisional protection only.*)—" An im- " *proved box for* papers, letters, and other documents." The

patentee briefly describes his invention as follows:—"This in-"vention consists of a box of any suitable form for holding "letters and documents. To the lid of the box is fastened one "end of a spring, and the other end is attached to the body of "the box, thus rendering it self-closing. In the lid of the box "a provision is made for holding labels or addresses."

[Printed, 4d. No Drawings.]

A.D. 1855, August 7.—N° 1790.

TILESTON, WILLIAM MITCHELL.—(*A communication.*)—"Im-"provements in machinery for ruling paper." The improvements effected by this machine are that "the ruling across and along "or up and down the paper" is performed in passing the sheet only once through it; that the pens can be lifted from the paper "so as to leave any desired width of heading;" that the ruling pens are supported when not resting on the paper, "whereby the "soiling of the paper by the ink is prevented;" that the sheet is guided "from the set of pens which rule the paper in one direction "to the other set of pens which rule it in the other direction;" and that the ruled sheet is discharged into a receiver by a method, "whereby the sticking of one sheet immediately upon the sheet "which precedes it is prevented." The machinery consists principally of rollers and conducting bands, and is in two parts or divisions at right angles to each other. The sheet of paper "is "fed upon a platform" to the first feed-roller on which it is kept by a number of bands; these pass round three small guide rollers, "and carry the under side of the paper in contact with the first "set of pens." The sheet then travels to a second feed-roller and by a similar arrangement is ruled on the upper side. It now passes on to conducting bands, across two rollers to another set of bands "which guide it to a travelling band" running at right angles to the others. The sheet in passing on the travelling band "strikes against a set of inclined revolving drums," the action of which together with that of the band causes it to proceed "in a direction at right angles to its first course" on to feed-"rollers and against pens, as above described, where the cross ruling is performed on both sides; it then passes over another set of conducting bands and a "square revolving roller," and finally drops into a receiver. The pens are supplied with ink from troughs "in the usual manner," and "the different rollers have "motion imparted to them by spur wheels, pulleys, bands, etc."

" The manner of lifting the pens when the ruling of the lines " up and down has continued long enough to leave a proper " heading to the sheet is as follows :—The edge of the sheet as it " is fed in abuts against a bent moveable tongue," which is attached to the inside of a roller situate above the first feed-roller, and is retracted by a spring, and turns upon a pivot. " This " roller has a portion of its periphery cut off, so as to prevent its " bearing upon the feed-roller ;" another portion has a cam upon it. As the sheet passes along, its edge strikes against a flange on the bent tongue, which bears against a shoulder in the roller and turns it on its axis, " and the bent tongue, turning on its pivot " will be forced up and away from the periphery of the roller." As soon as the roller has turned sufficiently, its cam " will be " brought to bear upon the feed roller and turn it so as to lift " an arm " attached to the upper roller. " This arm passes " through a bearing in a vertical bar, whereon slides a box, " which is fastened to the penholders by a set screw so that the " raising of the arm also lifts the pens." The roller " is pre- " vented from turning until it is struck by the edge of the paper " by a slight spring " which bears upon it. The other pens " are " lifted at a proper time in a similar manner, and as the length " of the heading depends upon the position of the feed roller, this " length can be varied " by sliding the arm " in its bearing in the " vertical bar." All the feed rollers are grooved, " so that the " pens when resting upon the paper come directly over these " grooves, but do not rest upon them, so that no ink is received " by the feed rollers." In order that the sheet " may pass exactly " straight to the pens which rule the lines at right angles to the " first ones," the conducting bands are arranged " so as to con- " verge towards the side framework," and thereby to carry the sheet against a proper guide in the framework or against the framework itself. The angular projections of the square " or other " polygonal guide roller " give " a slight vibrating motion " to the sheet as it passes over, thereby preventing " its sticking upon " the preceding sheet of the receiver as soon as it comes in contact " with it."

[Printed, 10*d*. Drawing.]

A.D. 1855, August 16.—N° 1860. (* *)

PAGET, FREDERICK.—(*A communication.*)—(*Provisional protection only.*)—" An improved holder for steel or other pens, by which

" ink is supplied to them." It consists "in constructing the " upper part or handle of the penholder of vulcanized india- " rubber, gutta percha, or other elastic or yielding material in " combination with wood or other rigid material, if necessary to " give it support." "This holder or handle is hollow, with a " piece of sponge, &c. forming a reservoir for ink. The supply of " ink to the pen is regulated by the pressure applied to the ex- " terior of the holder by the fingers at the time of writing."

[Printed, 4*d*. No Drawings.]

A.D. 1855, August 22.—N° 1901.

LOWNDS, JACOB J.—" An improved extension pen and pencil " case." This invention consists in a peculiar arrangement of the tubes and slides, " whereby the case is made to contain both " the pen and pencil," one at each end, and either can be used separately without interfering with the other, at the same time allowing the case to be extended, if required, when in use. The outer case " is a simple tube, either plain or ornamented;" to the inside of it is soldered the flanch or projection of a stationary tube of the same length, but considerably smaller in diameter, and having a slot with a notch or recess at its upper end. Within the stationary tube is a sliding tube which has a slot with a notch at its lower end, and inside the sliding tube is a pencil tube which moves up and down both tubes by means of a " spur or projec- " tion " upon it. The sliding and pencil tubes " have a portion " of their sides cut off at the lower end," and these ends " are " somewhat spread out or expanded," that " all unnecessary play " or looseness of the parts " may be avoided. At the upper end of the sliding tube is a small button which is soldered to the interior of a tubular slide; this slide works between the outer case and the stationary tube. The pencil tube " is moved out " from the case by operating " the slide, which when drawn out and " turned to the left " throws the spur into the notch in the stationary tube; the slide and sliding tube " are then forced " within the case, leaving the pencil tube fully exposed." The penholder is of semi-tubular form and fits over its sliding tube, which has a slot and notch at the upper end to admit a spur on the inside of the holder. This sliding tube and holder move up and down on the outside of the other part of the stationary tube, where there is a slot with a notch at its lower end. A tubular

slide is secured to the sliding tube, as above described, and the pen is drawn out in a similar manner, but it passes through a "semicircular slot" cut through the slide. There is a reserve for leads in the centre of the slide, and the ends of the sliding tube and holder "are contracted" to suit the shape of the pen. Either mechanism can be omitted, and the slide not required can be soldered to the stationary tube.

[Printed, 8*d*. Drawings.]

A.D. 1855, August 31.—N° 1965.

PALMER, WILLIAM RUSSELL.——(*Provisional protection only.*) —"Improvements in writing desks," for use in the dark or by the blind. This invention is thus described by the patentee:— "I construct an oblong box, about ten inches long by six wide "and three in depth, though the size is not material. The top "of this box, for about one-third or half its length, is hinged at "the end, so as to be elevated, or is slid back, as preferred, and "underneath this top, near the lower end of the box, is a cylinder, "around which is wound a continuous sheet of paper, so as to "be easily drawn off, as needed. The top of the box, above the "hinged or sliding top, and between it and the rollers, hereafter "referred to, is of close-grained hard wood, or metal, or glass, "which makes the surface or tablet for writing. The paper passes "from the cylinder between the moveable top and the tablet, over "the tablet, and then between two other rollers or cylinders, "which are worked by a little finger wheel at the side of the box, "and which move the paper as desired. The proper distance to "which the paper is to be moved whenever a line is written, *i.e.*, "the distance between any two of the lines, about half or three-"quarters of an inch, is measured by a pawl falling into a cog "wheel upon one of these rollers, and which records by a little "click when the paper is drawn the right distance. Upon the "lower end of the desk is a rest for the arm, and which has a "rotating motion to give easy motion to the hand; and the end "of the box upon which this support rests also extends, when "desired, so as to be adapted to the length of the arm. The width "of the paper, and consequently the length of the written line, is "such, that there is no necessity of lifting the hand when writing, "*but the natural* sweep of the arm carries the pencil across the "*sheet. It follows* that the written line will be slightly curved,

" but this does not matter, as every line will be parallel with the " preceding ones. I sometimes also have a rest, movable across " the tablet, designed for the little finger, and which is so con- " trived that when it has passed across the page it touches a " spring, which moves the rollers before mentioned, and carries " the paper the proper distance. A small moulding or wire runs " along the top of the box, at the side or edges, and serves as a " guide to the pencil used in writing where to commence a line " and when it is finished. At the upper end of the box are two " more bows or wires, which can be raised when desired, making " a sort of top, the object of which is to sustain the bed covering, " so that they shall not interfere with writing when the desk is " used in bed."

[Printed, 4*d*. No Drawing.]

A.D. 1855, September 4.—N° 2006.

BULL, JAMES HENRY. — "Improvements in fountain ink- " stands," whereby, first, the ink in the fountain is prevented from running out through the service cup, " even if the inkstand " be upset;" secondly, all the ink in the fountain will run into and supply the cup, " until the fountain is entirely empty, and " that without inclining or moving the stand;" and, thirdly, the expansion of air and ink, under variations of temperature, is obviated by a chamber into which the ink " passes and again runs " into the fountain" when " again contracted by a decrease in " temperature." The fountain, of porcelain or other suitable material, has an aperture in the bottom into which is introduced " a metal thimble." Into the bottom of the thimble is screwed a plug with an elastic washer; the fountain must be inverted before it can be filled. Through this thimble the ink runs down " a curved inclined passage" into the service cup; the passage is " curved horizontally," so that if the inkstand be upset, the ink cannot escape, because the " curved form of the passage ensures " that ink will remain in the cup or in the passage at some point " on a higher level than some portion of the inside of the pas- " sage." To obviate the expansion of air and ink, a chamber " is provided below the fountain; the bottom of the chamber is " slightly above the level of the ink in the cup," and the chamber is connected with the cup by means of a suitable passage, so that, when ink is forced by change of temperature into the cup, the

overplus will run into the chamber. This passage should be curved "so as to be somewhat similar in action" to the other. On the top of the inkstand "is a ring by which a chain and cover "to the service cup may be attached."

[Printed, 6*d*. Drawing.]

A.D. 1855, September 13.—N° 2066.

MACINTOSH, JOHN.—"Improvements in metallic and other "pens." This invention is divided into two parts; the first consists in forming on one blank of steel or other suitable material two nibs, one at each end. When one nib is made by the machine, the other end of the blank is placed by hand again in the machine, and a nib made thereon. "The machine may be so arranged "as to make a pen on both ends of the piece of metal or other "material used for pens in one operation." The second part "consists in making pens of a flat instead of a semi-cylindrical "surface or shape." The patentee asserts that in these flat pens "there is a peculiar elasticity or spring," and that each nib "will "last double the time of the ordinary pens."

[Printed, 4*d*. No Drawings.]

A.D. 1855, September 14.—N° 2076.

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—(*Provisional protection only.*)—"Improvements in bottles, ink-"stands, and other vessels, and in caps or stoppers for closing "the same." In their Specification the patentees say, "The "object of this invention is to facilitate the closing and opening "of bottles, jars, and other vessels. To this end we so construct "these vessels as to permit of the application thereto of caps or "covers, which, without any extrinsic aid as bands, clips, or wires, "will retain their position and permit of being readily removed "when required. For covering bottles, jars, or other vessels "which require the removal of the cap or cover whenever access "to the interior is desired, we form a shoulder on the neck of the "vessel, with inclined grooves to receive pins projecting from the "inner periphery of the cap or cover; or we form inclines on the "under side of the shoulder for the pins to bear against as the cap "is turned, and thus bind the cap tight to the neck of the bottle "*or jar.* The shoulder must of course be grooved vertically to "*allow of the pins* reaching the inclines on its lower edge. Or,

" in lieu of this arrangement, the vessel may be provided with " projecting pins, and the cap with inclines; but we prefer the " former plan. The insertion of some elastic material in the cap " to come in contact with the lip or upper edge of the vessel will " insure an air-tight closing of the vessel. For closing that class " of vessels to the interior of which access is required without the " removal of the cover, taking for example inkstands, we make " the inkstand cylindrical, and fit into the upper end a disc " pierced with an excentric hole. The cap we pierce with a hole " corresponding thereto, and when the two holes are brought " into coincidence a pen may be inserted as in a common ink- " stand. To render this vessel fluid-tight when closed, and there- " fore portable, we tap the upper part of the vessel and the cap " with a coarse screw, or provide a means similar to that above " described for securing the cap to the vessel. We also propose, " by increasing the depth of the cap, to gain sufficient friction " surface (with the aid of an elastic packing or not) to hold the " cap securely in its place."

[Printed, 4*d*. No Drawings.]

A.D. 1855, September 15.—N° 2084. (* *)

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—(*Provisional protection only.*)—" An improvement in the manu- " facture of certain articles which are subject to the corroding " action of the air and moisture."

By reason of its non-oxydizable qualities aluminium is used in place of brass, copper, and silver, for wind and stringed instruments, and also as a material for pens, penholders, and inkstands. " The metal for forming the pens and penholders we propose to " roll or beat out into thin sheets, in order to give toughness and " rigidity thereto; we then, by the ordinary means, convert this " thin metal into the articles desired."

[Printed, 4*d*. No Drawings.]

A.D. 1855, September 17.—N° 2095.

GIBBS, EDWARD.—A new or improved manufacture of such articles (amongst them inkstands) as are or may be produced by the process of moulding. The substance used by the patentee for moulding is " the asphaltum or pitch obtained as a residual

" product in the distillation of gas tar for the manufacture of " coal naphtha." This "indurated pitchy matter" may by the application of heat be softened and readily moulded into various forms, the articles to which it is specially applicable being " vases, picture frames, busts and figures, inkstands, flower pots, " medallions, and ornamental boxes and baskets." In order to increase the hardness of the pitch, "I mix," says the patentee, " therewith charcoal or brick dust in fine powder. The propor- " tions which I prefer to use are four parts of pitch to one " part of charcoal or brick dust, but I do not limit myself to any " particular proportion. Where the form or size of the articles " renders it desirable, I use a foundation of wood or other solid in " order to give stability to the article to be manufactured."

[Printed, 4d. No Drawings.]

A.D. 1855, October 2.—N° 2194.

PÉAN, LAURENT MARIE RENÉ.—"An improved inkstand." The outer case of this inkstand has its orifice grooved round the edge, and encloses an ink vessel, " the neck or tight part of which " is smaller" than that of the case. The lid has " a gallery;" beneath it is a cylindrical ring of a diameter rather larger than that of the neck of the ink vessel, but smaller than that of the case. On the lower side of the ring is stretched a round piece of india-rubber by means of a copper ring. On the lid are two knobs, which slide in slots, and " operate two springs;" two bevilled bolts "adapted beneath the lid" pass through slots in the ring, and, when the lid is fitted on, enter the groove of the case, " being " actuated by the springs." A loose cup, " funnel shaped, with " external projecting flanch," passes through an opening in the centre of the lid; and beneath the flanch is fitted a cylindrical spring, "the lower edge being turned up so as to confine the cup " into the opening, where, however, it can move freely." The end of the cup passes through the india-rubber piece, "to which " it is adjusted in any suitable way," into an "extension tube." To supply the pen with ink, it " is inserted with a slight pressure " into the loose cup, which lowers down in the opening of the lid, " and causes the india-rubber piece to press on the internal air " of the ink vessel; this pressure drives the ink up through the *tube into* the cup.

[Printed, 6d. Drawing.]

A.D. 1855, October 22.—N° 2363.

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—"Improvements in clips or holders for suspending railway "tickets and other small articles." These clips, of wood, bone, or metal, are made in a variety of forms; "they all possess two "principal features in common," viz., the ticket is held in such a manner that it may be examined without removing it from the clip, and the clip is "readily attached to a button, button hole, or "other appendage of the traveller's garment." The clip may be shaped like an acorn, having its nut split down the middle to receive the ticket; a pointed pin, "with a screw thread cut on its "stem, is provided for piercing the ticket, and retaining it in its "place," and a looped cord is attached to the upper end. Instead of a screw there may be fixed in one side of the acorn a pin projecting into the split; the end of this pin is chamfered off, so that it presents but little obstruction to the insertion of the ticket, whilst it possesses a considerable retentive power. One part of a stud may be split and similarly provided, the other part being for insertion into a button hole. Again, the nut may be made in two parts, each with a shoulder, and the cup screwed on. A bent pointed pin may be so attached to the lower end of the cup, that one turn of a screw will secure or release the ticket; in this modification a stop pin passes through the cup into a recess formed in the edge of the nut "for the purpose of limiting the "amount of axial motion," and a hollow screw plug is introduced into the upper end of the cup to receive and hold fast the suspension cord. Again, the clip may consist of a split piece of wood or other material, "approximating to the form of a cone," over which slides a ring, and the cord is threaded through the end of the clip. If the ticket be made of thin paper or other flexible material which "admits of being lapped round the stem of the "clip," the split may be dispensed with. A split clip may be made with a cap piece attached to it by an elastic cord. "This "cap is notched to correspond with the split, and the tension of "the cord will cause the cap when in its place to press against "the edge of the ticket and hold it in place." Or the cap may be retained in its place by means of a screw thread; or an elastic band may be attached for the purpose of pressing the split parts together. Other clips are made of a strip of metal rounded into a tube, and "the abutting edges" are used as a holder. "Clips

" of this construction will admit of a very wide application." Others are made " with a disc or other shaped piece, suitable for " taking into a button hole; " the blank is of such a shape that one part is bent into a tubular form, a second part forms a strap piece, connecting the tube with the third part which makes the disc or button. Another description is made " by doubling back " a piece of metal stamped of the form of a double lyre; " the strings of the lyre form a tongue, between which and the frame the ticket is inserted; the counterpart enters the button hole and may be used to hold a second ticket. Other clips consist of a bent wire joined to a plate and resting upon a projecting pin; this arrangement may be employed (when made on a larger scale) for holding receipts, cheques, &c. In the last modification described by the patentees the stem of the clip is composed of two parts, the one terminating in a point, the other in a tube or socket; " but when put together they form a stem with a smooth " surface, and of uniform diameter." The secure attachment of the parts is effected by tapping their ends. Each part is provided with a knob or button, one for the button hole, the other to retain the ticket. This last described holder too may be made on a larger scale for holding documents; but in such case the screw for connecting the two parts is not required.

[Printed, 10*d*. Drawing.]

A.D. 1855, October 27.—N° 2397.

STARK, EDWARD.—" Improvements in pens for writing." This invention consists in an arrangement of a pen and holder, whereby a constant supply of ink is obtained from the reservoir as required. The holder, which forms the reservoir, is composed " of a tube or " tubes of silver or other suitable metal," the lower part being of smaller diameter than the upper. " At the point where the fore- " finger rests on the holder in writing," is an oval opening covered air-tight by an india-rubber tube. A cover " slips tight " over " this tube, and entirely conceals it, except at the oval opening; the upper end of the cover is held by a ferrule. The pen clip, which " is somewhat like the ordinary clip for pocket " penholders," screws into the holder; it has a small channel " bored through the solid metal," and " long enough to convey " the ink down to the hole " above the pen slit. The inner end of the channel is fitted with a valve " made of ivory, or other

" material not prejudicially acted on by the ink;" the valve is mounted on a fixed fulcrum, and has a " stem passing immediately " under the india-rubber diaphragm," so that the finger presses on both at the same time. " This valve should be faced with a " piece of india-rubber, tied or otherwise fixed to the stem to " render the valve tight;" and in order to give it a constant tendency to remain closed, a band of india-rubber is passed under the stem round the holder, " in which there is a groove for its " reception." Instead of a band, " a spring may be attached to " the valve stem." At the top of the holder is a screw cap for the introduction of ink, and at the bottom a cap to protect the pen; this cap can be taken off and placed on the top of the holder when the pen is required for use. To cause the necessary supply of ink to flow on to the pen, the forefinger must be kept pressing more or less on the diaphragm.

[Printed, 6*d*. Drawing.]

A.D. 1855, October 31.—N° 2426.

RAMMELL, THOMAS WEBSTER.—" Improvements in preparing " black lead, chalk, and other materials used for drawing, writing, " and marking." This invention has for its object the coating black lead, chalk, &c., with cement, " in order to give strength " thereto, and to increase the diameter thereof." Various cements may be used, but the patentee prefers one of " whitening and size " made into the consistence of soft dough." The machinery and the coating are thus described:—On a fixed bed or table is a sliding plate moved by a screw, " its two ends being guided by " guides fixed to the table." On the sliding plate " are fixed " any number of cylinders or other proper form of chambers " for containing the cement. Each cylinder has a piston " to express " the cement out at the end and through the moulding die or " orifice." The ends of the cylinders fit into a fixed block, and a moulding orifice for each is placed in a recess in front of it. The moulding orifices consist of central cylindrical hollow holders for receiving the ends of pieces of black lead or other marking material, " such marking material being cut or formed with four " equal sides," so that on entering the orifices, they will admit of the cement passing through the spaces left between their sides and the interior of the orifices. " In addition to the central passage

" for the cement, there is an opening through the die above and " below the centre for the passage of the cement." On the cement being expressed from the cylinders through the orifices, it enters moulds formed in a block, which is fixed to the sliding plate by pins. These moulds hold the pieces of lead, &c., and as soon as the cement passes to the end of them, the movement of the sliding plate is stopped; the moulds " are to be removed from " the front of the moulding orifices," and the coated pieces are then to be forced out of them by rams. The end of the rams nearest to the moulds is made with " a hollow conical recess," which serves to keep the outer ends of the leads, &c. " properly " centred in the moulds," when the block is placed in its proper position. Other apparatus than pistons may be employed, and the marking material may be cut into various shapes. In constructing pencil cases, the interior of the caps thereof is furnished with a cutter made with a conical guide, but the patentee makes no claim thereto.

[Printed, 6*d*. Drawing.]

A.D. 1855, November 7.—N° 2509.

LUND, WILLIAM, and BAIN, ALEXANDER.—" Improvements " in pencil cases." The pencil cases to which these improvements relate are such as have a groove or channel to contain the lead or other marking material and a slot for a spring slide and propeller to move in. The invention lies in the peculiar formation of the slide and its combination with the propeller. The slide and propeller may be one piece of metal, the part forming the slide being annular, but not joined at one point. " On placing the slide over " the pencil case, and the propeller and arm into the groove and " slot, the edges are further separated from each other, and the " slide is thus made to clip the outside of the case, and form a " spring." Or the slide may be made so as to form a spring on the outside of the case and be connected to a separate propeller by means of an aperture in the top for the reception of a stud on the arm of the propeller; the slide is bent into an oval form, having the interior hollow " for the sake of lightness and neat- " ness." Or the propeller may be curved so as to form a spring when inserted into the groove; it may be used by itself or in conjunction with a spring slide; or the propeller may be " in the

" form of a split rod, one end of which carries an arm which " forms the slide and rises through the slot." A spring slide for " Riddle's patent pencil cases " is formed " of a plate or ribbon " of steel with a thread pressed into it, which thread takes into the " spiral groove on the pencil case. The ends of the plate are " brought together and made to overlap, so as to form a spring " on the outside of the case." The propeller is made with two shoulders between which the slide is inserted. It is not essential that the spring slide should move in a slot parallel with the channel, as a spiral groove may be cut through the case, and the slide may be made to travel therein. Some cases have a rack cut upon or fixed on to them, and an external spring, fitted to the arm of the propeller, or made in one piece with it, takes into the rack. The combinations of slide and propeller are not limited to the above described; the patentees claim the adaptation to pencil cases, with or without a rack, of a slide or slide and propeller, which " form a spring either on the outside or the inside of the " case, or both on the outside and inside thereof."

[Printed, 8*d*. Drawing.]

A.D. 1855, November 7.—N° 2515.

BURGIN, THOMAS.—(*Provisional protection only.*)—" An im- " proved construction of ledger hand-rest." The Specification is as follows:—" The object of this invention is to provide a tempo- " rary rest or support for the hand of the book-keeper when " writing at the bottom of the leaf of a ledger or other thick " account book. For this purpose I attach to one end of a piece " of thin sheet metal or hard wood a rest-piece of any requisite " thickness, and I shape this sheet or piece of hard wood so that " it shall form a support for the rest-piece when under the pres- " sure of the hand of the writer. The thin part I slip under " some dozen or twenty leaves of the book to bring the open page " on a level with the rest-piece, and the weight of the overlying " leaves will then counterbalance the pressure of the writer's hand " and form the requisite support. The under side of this hand- " rest I prefer to make without any raised part, in order that this " side may be placed uppermost when the hand-rest is required to " be used by a writer entering accounts at the end of a ledger or " other account book."

[Printed, 4*d*. No Drawings.]

A.D. 1855, November 12.—N° 2536.

BOUILLOTTE, JULES CÉSAR ALEXANDRE.—"An improved "letter-copying press." This press is composed of two wooden or metal plates, four uprights, two jointed bevilled levers, and a vertical rod with its upper part forming a ring. The uprights are screwed to the lower plate, and are each provided with brackets, "on which the lever sides rest." The journals of the levers are inserted into the upper ends of the uprights, and are so disposed that "the heels" of the levers, when "the levers are raised to the "vertical position," may press "on iron reglets," fitted in a groove in the upper plate. The heels "are rounded only towards "the center side of the press, in order to allow the depressing of "the levers" and the raising of the same, "and thus release and "press the copying book." In the middle of the upper plate a rod is adjusted on a metal disc (which is screwed to the plate) and pinned beneath it, so that "the rod may effect a quarter revolu- "tion." It is provided with two arms, which, on its revolving, press on the ends of the levers when they are in a horizontal position, and thereby raise the upper plate for the purpose of removing or inserting the copying book.

[Printed, 6*d*. Drawing.]

A.D. 1855, December 14.—N° 2827.

TODD, CHARLES JOHN, and PINKNEY, ROBERT.—"A "balance pen." The patentees describe their invention in the following words:—"It consists in making metallic and other "pens with a projecting collar of metal or other suitable material, "with flat edges, or round, or any other suitable shape, and "either moveable, or fixed on, or made of an entire piece with "the pen. This projecting collar is placed about the centre of "the pen, or at a suitable distance from the point, in order that "the pen, when placed in the ordinary penholder and charged "with ink, may not touch or soil the article upon which the pen "is laid; and in ruling, that the charged part of the pen may not "touch or soil the ruler. For quill pens the projecting collar is "made moveable, so as to slide up and allow of the pen being "mended."

[Printed, 6*d*. Drawing.]

1856.

A.D. 1856, January 12.—N° 89.

BAIN, ALEXANDER.—"Improvements in the construction of "inkstands." This improved inkstand "is a hollow cylindrical "vessel, somewhat in the shape of a mortar, made of any suitable "material," and mounted on "a cylindrical foot or fulcrum" on which it can turn. On the top of the vessel is an opening which serves as a dipping cup, and through which ink is poured into the vessel. The opening is furnished with a lid which is fixed to a stem moving freely on a stud on the top of the vessel; at right angles to the stem is a shorter stem fixed at one end to the stud and having a weight at the other end. This weight is heavier than the lid, and is for the purpose of causing it to cover or uncover the opening according to the position in which the vessel is placed. "The advantage sought to be obtained by this invention "is to keep the substances of which the ink is composed well "mixed by agitating it every time the inkstand is taken into or "put out of use."

[Printed, 6*d*. Drawing.]

A.D. 1856, January 16.—N° 115. (* *)

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—"Improvements in the construction of inkstands, applicable in "part to other vessels for the reception of fluids." These are, fitting in an opening of the air-tight cover of a fountain inkstand a double or compound "flexible valve," by preference made of two "dish-shaped pieces of vulcanized india-rubber, the upper "one being pierced to allow air to pass upwards through it when "air is required to be withdrawn from the inkstand, and the "lower one being made self-closing, so as, when pressed upon, "to serve as an ingress, egress, or cut-off valve, as required." By the action of this "compound valve, air is forced in or with-"drawn from the inkstand, and, simultaneously, the rise of the "ink to, or its descent from, the dipping cup is effected." Also, applying valves, acting on this self-closing principle, to certain other uses; the arrangement of the valves in each example being specially adapted to the purpose for which it is applied.

[Printed, 8*d*. Drawing.]

A.D. 1856, January 28.—N° 225.

D'AUVERGNE, JEAN BAPTISTE JULES HYPPOLITE.—"Improvements in portable writing or drawing desks." "My invention," says the patentee, "consists in the peculiar construction of a light portable desk, adapted for writing, drawing, or reading by persons in a standing posture; for example, for out-door use, and which I designate a cartograph. The simplest way of making this portable desk is to take a piece of thin board, and fit to each side a small rod, secured to the board by hinges. The rods are connected together by a cord or strap, which when in use is passed round the neck of the person, the rods lying against the breast. The desk, being thus hung, it may be adjusted to any required position by means of the hinges." A modification consists in constructing it like a portfolio. In this case one of the sides rests against the breast, "where it is affixed by buttons or hooks, a string or cord being likewise passed round the neck, the other side of the portfolio forming the desk. The writing board may be set to the required angle either by brackets or sliding wedges, and secured by screws or racks. The cartograph may be fitted with an inkstand and small sliding cases for pencils, pens, colours, scales, compasses, paper, &c. It may also be furnished with clamps for holding the paper in windy weather, and with sockets or holes for holding a candle when the desk is used at night, or for holding an umbrella as a protection when using the desk in rainy weather."

[Printed, *4d.* No Drawings.]

A.D. 1856, February 5.—N° 317.

SQUIRE, HENRY.—(*Provisional protection only.*)—"An improved seal or fastening for envelopes, deeds, and documents." This invention relates to a mode of sealing or fastening envelopes, &c. with metal, and consists in so forming and connecting together the separate parts of which the fastening is composed, that the fastening is rendered more secure and ornamental than heretofore. "The fastening is composed of two principal parts, one part being formed somewhat like a button, with a pin of soft *metal fixed* therein or formed therewith; the other part is a flat *piece of soft* metal with a hole formed through the same." The

mode of using this fastening is as follows:—"The pin of the "button-shaped piece is inserted from the inside and back of the "envelope, thus puncturing the paper. The upper part of the "envelope is now brought down and pushed over the aforesaid "pin, after which the hole in the flat piece of metal is placed over "the pin, and pressure exerted thereon by any convenient means. "The effect of this is to flatten and spread that part of the pin "which is through the hole over the flat piece of metal, and thus "to securely connect the pin in and to the outer flat piece of "metal. This last-mentioned piece of metal may then be sub-"jected to pressure from a die, in any convenient and suitable "manner, so as to emboss the metal with any desired device, in-"scription, or crest, and in this manner and by these means an "ornamental metallic seal and secure fastening may be produced. "The above fastening may also be employed with advantage as a "legal seal for deeds and documents."

[Printed, 4d. No Drawings.]

A.D. 1856, February 9.—N° 342. (* *)

SWAN, CHARLES, and SWAN, GEORGE FREDERICK.—(*A communication.*)—"An improved coloring matter for writing, staining, "or dyeing, which is also applicable to the production of a copy-"ing fluid." A coloring matter, which will not corrode metallic pens nor have its colour affected by them, is obtained by "employ-"ing an extract of logwood or hæmatoxylon campechianum (in a "dry state or wet state, as may be required); and in order to "convert the color of the said extract to a suitable jet black color, "and to render the same color permanent, and to give the solu-"tion fluidity, indelibility," and other requisite qualities it is preferred "to employ a mixture of the following materials, namely, "bichromate of potash, perchloride of mercury, otherwise called "corrosive sublimate, subcarbonate of potash, chlorate of potash, "and spirit of ammonia, which said materials may be employed "in different proportions" for "particular objects." "Vinegar "or other acid substances" "employed in ordinary inks" may be substituted for perchloride of mercury. The coloring fluid so obtained may be converted into a "copying ink" by the addition of "saccharine" or "thickening ingredients."

[Printed, 4d. No Drawings.]

A.D. 1856, February 9.—N° 346.

RAWLINGS, JOHN.—(*Provisional protection only.*)—Improvements in envelope or stationery cases. "My invention," to use the patentee's own words, "in envelope or stationery cases refers "to those cases or stands which have double doors or covers, "which open to the right and left, and when closed meet in a line "in the centre down the front of the case, and consists in making "these doors of a curved outline on the face instead of the straight "line hitherto adopted; the curve or curves may be varied "according to taste, and gives great additional appearance to the "article. In these cases a writing slope is sometimes placed and "hinged to fold up in front, and within the doors when closed. "Instead of fixing the hinges of this slope, I fit it on joint pins, "which withdraw in the manner of a bolt, when the slope may "be removed and placed in an upright division of the case at the "back. Another improvement consists in forming the upper "edges of the partitions in these cases of ornamental, curved, or "shaped outline, throughout the entire breadth of the case, "which ornamental curving works into and in part forms the "thumb-holes for removing the paper or envelopes."

[Printed, 4*d*. No Drawings.]

A.D. 1856, February 15.—N° 397.

JOHNSON, JOHN HENRY.—(*A communication from Newell Anderson Prince.*)—"Improvements in fountain pens." This invention relates to an improved construction and arrangement of self-supplying or fountain pens of the class described in the Specification of Letters Patent granted to the patentee on or about the 24th February 1855, and the improvements claimed are a more even and regular supply of ink during writing; an easier adjusting or regulating of such supply; and a more convenient and effectual mode of charging the ink reservoir. To effect these improvements the pen is cut away or notched at or near its heel, and the feeding tube has a corresponding recess formed on it, so that the pen may fit on to it firmly and securely. They are inserted together into the reservoir, and if the heel of the pen is not as broad as the inside diameter of the reservoir, or if the pen is very flexible, a bead or elevation is made on the back near the heel; the bead, coming in contact with the inside of the reservoir, keeps the pen "*from rising* or lifting too much during writing." Inside

the reservoir is a piston head with a tapped hole, and a piston rod with a corresponding screw thread, so that they can be readily attached or detached; by this arrangement the rod can be drawn out and laid aside when the reservoir is filled. The piston rod may be made in two parts screwed together, the one part being hollow, so that the other part can be reversed and screwed into it. A cap or cover may be screwed on to each end of the reservoir to protect the piston and pen when not in use. An ink regulator is inserted transversely into the feeding tube; it is a short plug, either cylindrical or conical, with a small recess or notch cut out on both sides, "its widest dimensions being large enough to close "the passage through the feeding tube." To graduate the flow of ink or stop it altogether, the regulator is turned accordingly by means of a wrench at the end of the pen cap. When the reservoir is constructed to be filled by suction with the mouth, instead of by means of a piston, an indicator is used to show when the reservoir is full. In the upper part of the reservoir is placed a chamber of the same diameter throughout, or of a slightly oval form. The top of the chamber is closed by a screw cap, and the bottom has a hole bored through it. In the chamber is a float, hollow or not according to the substance of which it is made, to which are attached two spindles, one passing into the reservoir, the other through the screw cap; a plug furnished with a shoulder is screwed on to the cap, thereby closing air-tight the hole made for the reception of the spindle. In either arrangement the regulator must be opened to fill the reservoir; in the latter the plug must be removed, and the upper spindle will rise and indicate to the tongue of the operator that the reservoir is nearly filled.

[Printed, 8*d*. Drawing.]

A.D. 1856, February 20.—N° 435.

CLARK, JEREMIAH, and AUSTIN, JAMES.—"Improvements in "apparatus for stoppering or closing bottles, jars, and other similar "vessels." The patentees describe their invention "as applied to "the neck of an ink bottle." A closed cap of metal, hard rubber, or suitable material, is fixed by cement, screwing, or other mode, to the neck of a bottle, either outside or inside as may be convenient. A spout is formed on one side of the cap, "and an opening is "made in the top of the cap itself," through which "the liquid "to be poured off reaches the spout." Both opening and spout are closed air and liquid tight by an india-rubber or other

suitable packing fitted to the under side of a conical plug which is formed on one end of a thumb lever. This lever works on a fixed centre in a small support which is secured to the cap; it is lengthened "so as to admit of the thumb being pressed down "upon the prolonged end for the purpose of raising the plug." A metallic spring serves to bring the plug down again when the pressure is removed. "The spring may be made to act in such a "manner as to keep the plug firm in its seat when closed, and "also to keep the aperture open when the plug has been raised." Or "the whole or a part of the top of the cap may be made to "open or close on a hinge by a small thumb lever similarly acted "upon by a spring, the lid being shaped so as to cover also the "pouring spout;" the conical plug will be dispensed with, the spout "being kept tightly closed by an india-rubber or other "suitable packing fitted to the face of the lid at the part where "it rests upon its seat when closed." In either arrangement the raising of the plug or lid may be effected by a prolongation of that part which covers the spout, "the thumb lever in such case "being dispensed with, whilst the spring would be still retained "to keep the plug or lid tightly closed."

[Printed, 6*d*. Drawing.]

A.D. 1856, February 25.—N° 475.

HEYWOOD, BENNETT JOHNS.—"An improved holder for "leads, slate, and other marking materials, applicable also as a "case for other articles." The holder is made of wood or other suitable material; a hole is bored through its centre from end to end; and a helical groove, reaching to the central hole, is cut round its periphery. The marking material is placed in the central hole; a slider (a short metal rod) is introduced behind the marking material, and a stud, projecting through the groove, is screwed to the slider. To prevent the slider "from rattling in "the holder," and to enable it "the better to resist the pressure "put upon it during the act of writing," it may have "a ring "of cork or other elastic packing, which will press tightly against "the inner periphery of the holder." The upper extremity of the holder "may be closed by a cap or plate, or it may be fitted with "a seal like ordinary pencil cases." The like arrangement "may be employed as a holder for tooth-picks, pens, or other "*articles* required to be carried in the pocket."

[Printed, 6d. Drawing.]

A.D. 1856, February 26.—N° 492.

SCHÄFER, PHILIPP, and SCHÄFER, FREDERICK.—"An im-" proved apparatus for damping gummed stamps, tickets, labels, " and envelopes." The apparatus is contained in a case, the lid of which closes with a catch, and is thrown up by a spring; it is composed of a reserve for water in the shape of a bottle or otherwise, a socket, and two pads. The reserve is screwed into the socket; one pad, made of some absorbent material (a sponge may be used if preferred) and having pieces of thread attached to its under surface, is placed in the socket. The other pad, of " velvet or other cloth," is fitted into the under side of the lid. In the lower part of the case there may be a drawer to hold stamps or labels. A label being placed with its gummed side in contact with the lower pad, the case is closed, and on reopening it the label will be found wetted on the under, and moistened on the upper surface, whereby " a perfect adhesion is insured."

[Printed, 6d. Drawing.]

A.D. 1856, February 27.—N° 500.

JOHNSON, JOHN HENRY. — (*A communication from Charles Vincent Steinlen.*) — (*Provisional protection only.*)—" Improve-" ments in the treatment of hard india-rubber, for the purpose of " rendering the same applicable to the manufacture of pens, tubes, " springs, and other similar articles." The caoutchouc is manufactured and hardened " after the manner adopted by the Paris " Hard India-rubber Company." The vulcanized sheets are divided into strips of a width corresponding to the length of one or more pens: the strips are passed between a pair of hard polished cast-iron or steel rollers (heated by steam internally), having been previously slightly softened by exposure to a moderate degree of heat; or in place of rolling the strips they may be subjected to a hammering process. They are next cut " trans-" versely, or in a direction at right angles to their length, the " width of the pieces cut off being sufficient to form, when " curved up, either a semicircle or an entire tube, according to " the style of pen to be made." The pieces are nibbed and split, and exposed for a short time to a somewhat higher temperature than before; this causes them " to shrink unequally or curl up " lengthwise " and assume of themselves the curved or tubular form required for a pen. The nibbing may be performed after

assuming the tubular form. A similar process is "obviously "applicable to other purposes where elasticity is required, as, for "example, to springs of all kinds."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 10.—N° 581.

NOLET, PIERRE DENIS.—"Improvements in penholders." The stem is of vulcanized india-rubber; the holder is a ferrule of india-rubber which slides over the stem, the upper end fitting into a groove therein. The pen is secured between the stem and a metal shield formed with a small hooked point at one end, which enters a notch in the stem, and with a flange at the other end, which serves to keep the ferrule from slipping off.

[Printed, 6*d*. Drawing.]

A.D. 1856, March 14.—N° 615.

PIMONT, PROSPER.—"A certain process for restoring metallic "spoiled pens." "The object of this invention," says the patentee, "is to restore to their original state of flexibility, hard- "ness, and efficiency, steel or other metallic pens which have "been thrown aside and spoiled by the use of bad ink, long use, "or neglect. To accomplish this purpose, the spoiled metallic "pens are exposed in a suitable vessel to the heat of a furnace "or to flame from any source, and raised to a red heat, or to any "temperature discovered by experience to be sufficient. The "pens are then allowed to cool, and afterwards cleaned from dirt "or smoke which may adhere to them. This restoring operation "if not sufficient is repeated until the desired object is obtained. "By this simple, but efficacious process, the pens, hitherto "deemed spoiled and therefore useless, are restored to their "original state as far as regards utility, and may be again used "for the purpose for which they are designed."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 19.—N° 656.

COHEN, BARNET SOLOMON.—(*Provisional protection only.*)—"An improvement in the manufacture of penholders" and other articles. The patentee thus briefly describes his invention:—"*This* invention has for its object the application of fuller's "*earth in the* manufacture of penholders, handles, knobs, finger

" plates, and umbrella and parasol furniture; for which purpose " the fuller's earth is ground with water, and rendered into a " plastic state, and, when desired, is mixed with coloring or other " matters to produce different effects, and the same is then " moulded or formed by pressure in or by moulds or dies. The " articles are then fired or burned in kilns or ovens."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 22.—N° 681.

HINKS, JOHN, and WELLS, GEORGE.—" Improvements in " metallic pens and penholders." The pens are made in such a manner " that when dipped into ink they shall take up a much " larger quantity of ink than the ordinary pen." To effect this there is placed on the back of the pen a saddle-piece, secured " by " its ends turning round the edges of the pen." The saddle carries a tongue, " which hangs over the back of the pen, and to which " a dome-like shape is given." The same or nearly the same effect is produced by cutting a tongue (above the slit) out of the metal of which the pen itself is made and turning it down upon the back of the pen. In penholders the object sought by the patentees is increased elasticity. For this purpose the blank is nearly divided transversely into two parts, " the said two parts " being held together by two necks," and then made into a cylindrical form. The two parts are sometimes joined by one neck only, which is shaped like a bow. " The lower end of the holder " may be prolonged, so as to bear upon the back of the pen near " the point, and thereby regulate the hardness of the same;" it may be formed into a dome-like shape, " so as to convert an " ordinary pen into a fountain pen." The holder is sometimes made in a form somewhat resembling a barrel pen, " having a " long and broad slit therein."

[Printed, 6*d*. Drawing.]

A.D. 1856, March 22.—N° 682. (* *)

SCHELHORN, GUSTAV GEORG ANTON LUDWIG MICHAEL.—" A new or improved penholder," " in which the pen is held by " being pressed against the concave surface of the metallic tube " or barrel of the penholder by means of vulcanized caoutchouc " or india-rubber, or other substance or mixture having the same

" or nearly the same elasticity as vulcanized caoutchouc or india-
" rubber."

[Printed, 6*d*. Drawing.]

A.D. 1856, March 22.—N° 687.

CAREY, CHARLES.—(*Provisional protection only.*)—" Improve-
" ments in presses for copying letters and other documents, and
" for other uses." " For this purpose," says the patentee, " two
" metal plates are used. At each of the four angles of one is
" fixed an upright male screw, and through each of the four
" angles of the other plate there is formed a hole, which will
" admit of the passage of one of the male screws fixed at the
" angles of the other plate. On the upper parts of the four
" screws are four screw nuts, each having a handle to facilitate
" its being turned round on its screw. In order to make copies
" of letters or other documents by this press, the book is placed
" between the two plates, and the four screw nuts are screwed
" down, so as to press the two plates towards each other. And
" when the press is employed for other uses, the article to be
" pressed is placed between the two plates and pressed, as above
" stated."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 26.—N° 717.

TOLHAUSEN, ALEXANDRE.—(*A communication from Halvor Halvorson.*)—" A new process of producing chemical writing."
To carry out this invention both paper and pencil must be chemically prepared. The common sizing used for writing paper is saturated " with a salt or salts, or substances of considerable
" solubility, and which when dried with the paper will maintain
" its dryness and freedom from moisture under ordinary atmos-
" pheric changes." This salt, &c. is to form the ground for the coloured writing to be produced on the paper. For producing blue writing the patentee employs ferrocyanide of ammonium or salicylic salts; for black, indigolic, euxanthic, and morphine salts; for red, meconic, kemenic, pyromeconic, and angelic salts; for green, caffeic or themic salts. " These salts, either singly or a
" mixture of those specified for each color, are mixed with the
" sizing." Other salts may be used, the principle of the invention

being "to produce chemical writing without an ink." The pencil is made as follows:—Take a deliquescent salt, for cheapness a ferric oxide, the nitrate, chloride, or sulphate of iron; triturate and mix it intimately with plastic clay, mould it into any form to constitute a pencil, and bake it until all moisture is driven off and the clay hardened. Remove it from the oven, and plunge it "into "molten bees-wax, spermaceti, or any substance of similar "character, which will form an air-tight coating, and not decom- "pose the ferric salt." It may then be placed between strips of wood or in a metal pencil case. The pencil may be made of a very porous substance and steeped in a solution of ferric salt, then dried, &c. as before. "A very porous fountain pencil may "also be made, one whose pores will permit fine ferric salt to per- "colate as it were through them, and be transmitted to the paper "in the act of tracing or writing, and impressed on the paper by "a hard point on the pencil to bring the salt or salts in the "pencil and prepared paper into contact." Glycerine may be used as a component part of the chemical pencil. "Without the "employment of a solution it will afford the same requisite "amount of moisture as a deliquescent salt. Paper prepared with "starch as a sizing will produce blue marks or writing if it be "traced upon with a porous pencil or fountain pencil containing "iodine and glycerine." Another mode of producing chemical writing is to prepare the paper in the manner first described, "and employ a dry salt in the pencil, and supply the hygroscopic "conditions to form the chemical union" of the paper and pencil by placing a moist sheet of paper under the paper to be written on, or by pressing a sheet of moistened paper on the written surface. The preferable salts are "the tartrate of iron, the terper- "sulphate of iron, or any of the permanent iron salts." "Type "may be formed in the same manner as the ferric clay pencil "described, and chemical printing may be executed without the "use of common topical ink."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 27.—N° 738. (* *)

BUFTON, EDWARD.—(*Provisional protection only.*)—"An im- "proved ink for marking linen and other fabrics, and in the case "or holder for containing the same, and the implements to be "used therewith."

"The improved ink consists in combining a salt of platinum " with silver metal, in the manufacture of an indelible marking " ink for marking linen, and other fabrics; I also add a portion " of bichloride of platinum, which I obtain in the usual chemical " way. And as regards the case or holder for containing the same, " the improvement consists in so constructing the same as that " the part which contains the ink, as also the bone or quill nibs, " or other marking implements, and the holder, slides within an " outer case or cover, open at both ends."

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 31.—N° 777.

PRINCE, ALEXANDER.—(*A communication.*)—(*Provisional protection only.*)—" Improvements in steel pens for regulating the " elasticity thereof." The means by which these improvements are to be effected are thus described by the patentee:—" I so " shape a piece of steel as that the upper part thereof when bent " forms a barrel, which fits either over the pen or the penholder, " as in practice may be found most desirable; and the lower part " of said piece of steel is in the form of a long narrow curved strip, " the extreme point of which presses upon the slit in the pen, and " the other part is curved or bowed outwards, which causes a " quantity of ink to be retained by capillary attraction between the " outer surface of the pen and the aforesaid spring, so that when " the pen is in use, as the nibs are opened, by pressing thereon in " the act of writing, the ink will flow between them from the " outer surface as well as the inner surface of the pen. The " alteration in the elasticity of the pen is effected by sliding the " aforesaid spring over the pen or holder, so as to alter the " distance between the points of the spring and the points of the " nibs of the pen."

[Printed, 4*d*. No Drawings.]

A.D. 1856, April 3.—N° 811. (* *)

BANNEHR, JAMES.—" An improvement in manufacturing or " preparing paper for and in mounting copies of written docu- " ments thereon;" and this improvement " consists in preparing " and coating both sides of ordinary writing paper with adhesive " matter," " of equal or indefinite proportions of gum acacia or " *dextrine and of* gum tragacanth, or any other gum," &c. and

when dry causing copies of documents, drawings, designs, &c. produced by the ordinary copying machine, &c. to be pressed on to one or both sides of such paper. The copies, &c. are wet from the machine, or are moistened when put on and pressed in a suitable press.

[Printed, 4*d*. No Drawings.]

A.D. 1856, April 18.—N° 931.

THOMPSON, GEORGE.—"Improvements in instruments or "apparatus used in drawing or marking with crayon, 'black lead,' "or other such materials." The principal parts of this apparatus are an outer case, an internal tube, and a propeller. The case, of wood, ivory, metal, or other suitable material, has a longitudinal slot in it. The tube, which has a similar slot in it, has a nozzle affixed to its lower end. The "fin" of the propeller moves in these slots, and is sometimes connected to an outer ring or ferrule; otherwise the upper end of the propeller is formed with slits so as to effect a slight frictional pressure against the sides of the tube. The outer end of the tube "is slit on opposite "sides, with a tendency for the parts to incline somewhat in-"wards." The case and tube are held together by a ring or ferrule. In a modification of this arrangement the tube extends only partially into the case, which must then be "formed internally "as a continuation of the tube." The nozzle is formed with a screw, whereby it is more readily attached to the ferrule, and detached for the purpose of being replenished. The fin should be connected to a sliding tube "to prevent its displacement by "the yielding of the outer tube."

[Printed, 6*d*. Drawing.]

A.D. 1856, April 24.—N° 980.

STOCKER, ALEXANDER SOUTHWOOD.—"Improvements in the "application of certain materials to the manufacture of ink and "other stands and other articles." This invention consists in mixing "pigments, colors, whiting, farinaceous or other sub-"stances" (alone or combined) with glue, resin, oil, water, paper, or any suitable material, with which a plastic body may be formed, and in applying the mixture "to the manufacture of inkstands, "glass shade stands, pen stands, clock and various other stands,

" knobs, finger plates, and other door furniture." These articles are moulded, colored, beautified and finished "by any of the well-" known methods now in use for such purposes." For the " mixture or semi-fluid " preferred, and for the details of manufacturing, the patentee refers to the Specification of a patent bearing date June 24th, 1855.

[Printed, 4*d*. No Drawings.]

A.D. 1856, April 29.—N° 1017.

RAMMELL, THOMAS WEBSTER.—" Improvements in pen and " pencil holders." The outer case of this improved holder, "in " place of being made with a simple slit with parallel sides, is " made with a slit having on either side enlargements " or holes. The internal tube " is split longitudinally throughout the whole " of its length, so as to enable it to spring over and hold tightly " the end of the pencil." It has also a longitudinal split for a portion of its length "so as to form an elastic tongue." On the tongue are a projection (which fits into the holes of the case) and " a rib " with a button or plate attached to its upper edge. Pressure on the button releases the projection and allows the internal tube to slide in the case.

[Printed, 6*d*. Drawing].

A.D. 1856, May 9.—N° 1098.

WILEY, WILLIAM EDWARD.—" Improvements in the manufac- " ture of pens and penholders." "The improvements are directed " to obviating and preventing the injurious consequence of one " of the nibs of a pen getting under the other, and at the same " time to conducting the ink to the nibs." The instrument for effecting these improvements may be fastened by soldering or otherwise to the pen or to the holder, but it is preferable to make it separate " so as to admit of its being used with a succession of " pens made suitable to receive it." The pen is made with a slot, part of which is of such width that a portion of the instrument "may pass through it and not be touched thereby on either " side," the remainder being narrow, so as to fit the instrument which is held in position by a projection entering a hole in the shoulder of the pen, and secured by a slide. The nibs rest on the *end* of the instrument, which acts both as a supporter and an ink *conductor; it should* be perforated, " in order to admit of the ink

"flowing from side to side thereof." The arrangement may be varied. In one, the pen is made with shoulders which enter notches in the holder; the slot is of equal width from end to end; there is also a slot at the back of the holder, and a hole in the front into which a projection on the instrument enters, while a slide secures the whole. In a second, the instrument is "attached "to the holder, and is arranged to be moveable on an axis." Again, the instrument may be made with a projection which "comes in contact with the paper, and thus forms a stop for "regulating the width of the line," and serves also as an ink conductor when the nibs "are opened out;" in this arrangement there are two shoulders, one on each side of the projection. Or the instrument may be fixed to the pen by sockets formed by cutting and bending parts of the blank. Two sorts of pens are described by the patentee:—in the one, two wire points, of suitable metal or mixture of metals, form the nibs; they are fixed in sockets, and projections prevent either of the nibs from getting under the other. In the second, the same object is gained by cutting out a part of the blank, and bending the cut out part in a suitable manner.

[Printed, 10*d*. Drawing.]

A.D. 1856, May 26.—N° 1256.

HEYWOOD, BENNETT JOHNS.—"Improvements in holders for "leads, slate, and other marking materials." On February 26th, 1856, the patentee obtained Letters Patent for an improvement "upon the helically grooved pencil case;" the present invention relates to the insertion in the central bore of the case of "an open "or unclosed tube, the internal diameter of which corresponds "with the diameter of lead or other marking material intended "to be used. In this tube the marking material is placed, and in "rear thereof the propeller, which is guided down by the helical "groove of the outer case, and caused to thrust the lead for-"ward." The point of the pencil case may be either attached to this tube and turn with it, or attached to, or formed in one piece with the case. In the arrangement the pin of the propeller must have a projecting head. This arrangement may be reversed; "the unclosed tube may surround the helically grooved barrel, "which will then form the receiver for the marking material and "the propeller. A pin from the propeller will enter the straight

" slot of the outer tube, and the requisite sliding motion will be " imparted to the propeller, by giving the tube an axial motion, " as before."

[Printed, 6*d*. Drawing.]

A.D. 1856, May 26.—N° 1259.

FOSTER, THOMAS.—(*Provisional protection only.*)—" Improved " apparatus for holding postage, receipt, and other stamps." A spindle, provided at one end with a knob or handle, is passed through a cylinder of any suitable material. A vertical slot is cut in both spindle and cylinder, and the stamps, after being cut into lengths, are attached to the former by inserting one end through the slots and rotating the knob or handle. A short piece of the end stamp is allowed to project from the slot in the cylinder, so that "the entire length, or any part thereof, may be drawn out, " and stamps torn off as required." The cylinders may be made " of a variety of ornamental forms and mounted in different man- " ners, and by lengthening the central spindle, or by employing " two or more spindles, two, three, or more different kinds of " stamps may be enclosed in the same cylinder."

[Printed, 4*d*. No Drawings.]

A.D. 1856, June 2.—N° 1301.

HEYWOOD, BENNETT JOHNS.—"An improved construction " of holder for leads and other marking materials." This invention relates to a novel mode of propelling the lead, &c. towards the point of the case. The case of wood, bone, or other suitable substance, is pointed at one end like an ordinary pencil case, bored through from end to end, the diameter of the bore corresponding with that of the lead to be used, and provided at the top with a screw thread to receive a cap. The propeller is a piece of wire with a disc of vulcanized india-rubber at the end next to the lead. To propel the lead, " it is only necessary to jerk the case forward " smartly in the direction of its length." To fit this kind of pencil case to receive leads of small diameter, the point of the case is split and made " slightly conical on its periphery," so that by means of a binding ring, tapped to take into a screw thread formed round the point, any amount of pressure may be put upon the *lead.*

[Printed, 6d. Drawing.]

A.D. 1856, June 2.—N° 1304.

HERLAND, AUGUSTIN MARIE.—"A new regulator penholder." The patentee claims the invention of a new kind of penholder with or without a regulator for the fingers. It is composed of two tubes; the inner one, into which the wooden stem or holder enters, has a longitudinal slot to increase, and a transverse slot to limit its elasticity. The outer one slides over the inner one, and a pin fixed on the latter fits into a longitudinal slot on the former; the pen is held between the two tubes. A small curved plate is soldered or rivetted on the outer tube, or secured to it by two rings, in the required position. This plate serves as a regulator, the extremity of the middle finger being placed in the concave part, and the fore-finger against the exterior of it.

[Printed, 6*d*. Drawing.]

A.D. 1856, June 7.—N° 1358.

WILEY, WILLIAM EDWARD.—"Improvements in the manufac-" ture of metallic pens and penholders." This invention has for its object the construction of pens and penholders of such form that, when they are laid on a table, the nibs may not come into contact with it. For this purpose parts of the blank from which the pen is made are cut out and bent, or bent only, so as to form spurs or projections. Or pieces of the blank are cut out and the other parts pressed inwards, or pressed inwards without parts being cut out, "so as to produce the pen from that portion to the points " or nibs of less dimensions than the barrel of the pen, by which " the barrel itself forms the projection." Similarly, "in making " penholders, portions of the metal near the ends where the pens " are introduced are cut and bent outwards, so as to form spurs " and projections, there being suitable holding ends formed at " the lowest or outermost ends, for receiving the pens beyond the " projecting spurs."

[Printed, 6*d*. Drawing.]

A.D. 1856, June 9.—N° 1361.

ROBERTSON, ALEXANDER.—"An improved inkstand." To the upper part of the ink vessel is cemented or otherwise fastened a collar with a cap screwed on to it. In the cap is an aperture through which passes a small tube attached to a hollow ring of

india-rubber or other suitable elastic material. Another cap is placed over the ring, and in the centre of this upper cap is a tube containing a dipping cup, at the lower end of which is a pipe reaching nearly to the bottom of the ink vessel. The tube has on its outer circumference a spiral groove into which fit two studs fixed on a flange in the upper cap, and to the flange a small handle is fastened. By pressing the handle and turning the flange the studs are worked along the groove, and the upper cap is made to press upon the ring, and thereby cause a portion of the ink to flow from the vessel up the pipe into the dipping cup.

[Printed, 6*d*. Drawing.]

A.D. 1856, June 21.—N° 1460.

VENTRÉ, EMILE. — (*Provisional protection only.*) — "An im- "proved carton or box for keeping papers or other articles." The box is constructed in such manner "as to admit of its being "opened and reclosed, and the contents withdrawn and replaced, "without displacing it or any article that may be resting upon "it." The face of the box is made to open or shut "by means "of a button placed upon a spring and running in a slot;" pressure of the finger upon this button "causes the face of the "box to fall, displaying its contents;" and the box is refastened "by raising this face or flap to its original position." As these boxes (which may be of any shape or material) "may be piled the "one upon the other," they will obviate "the necessity of the "expensive shelves and compartments now used in most offices."

[Printed, 4*d*. No Drawings.]

A.D. 1856, July 8.—N° 1609.

NEWTON, ALFRED VINCENT. — (*A communication.*) — "An improved fountain pen." The pen part of this invention is a tube secured to the reservoir by soldering or other convenient means. Immediately below the connexion the tube has a screw thread cut upon its exterior, and from the bottom of the thread it "is enlarged conically for a short distance." From the point up as far as the thread as many slits are cut in the tube as nibs are required. The thread is fitted with a nut at the bottom of which is a cup having a conical interior for the purpose of keeping the *slits as close as* may be desired. The point formed by the union *of the several nibs is* ground to the requisite degree of fineness.

The ink reservoir is a cylindrical tube tapering towards the end, and serves as the stem of the pen. It has at the upper end a screw cap, an air-tight junction being secured by means of a washer of leather or other yielding substance. A portion of the penholder is made in the form of a moveable cap, so that it can be placed on the lower part to serve as a protection to the point of the pen. "This, however, is only one of many ways of con- "structing the penholder."

[Printed, 6*d*. Drawing.]

A.D. 1856, July 21.—N° 1717.

BARBOUR, FRANCIS.—(*A communication from Ebenezer W. Hanson and Emanuel G. Kromer.*)—"Improvements in penholders." The patentee fixes to ordinary penholders "projections for the finger and thumb to rest against." These projections, of various shape or construction, are fixed either to the holder or to a tube or tubes so as to slide on it.

[Printed, 8*d*. Drawings.]

A.D. 1856, July 24.—N° 1763.

CATTAERT, CHARLES FRANÇOIS.—(*Provisional protection only.*) —Improvements in the stoppering of inkstands and other vessels, and closing cocks. The improvements consist in placing a flat or other surface of glass on the mouth of the vessel, "which is "ground true or otherwise formed so that the glass surface may "lie accurately upon it and entirely close the opening. The glass "surface is kept firmly pressed on the top edge of the bottle or "vessel by means of a spring placed behind or on the top of the "glass, or by a cap or otherwise." To close the fluid way of taps and cocks a screw plug is fitted "into the body of the tap, having "at bottom or on its inner end a piece of glass, which when the "plug is screwed down lies flat on the top of another piece of "glass, which is fixed in a suitable position in the body or fluid "way of the tap, and which has an orifice in its centre for the "passage of the fluid. The surfaces in contact of the two pieces "of glass must be ground true." The screw plug is worked by a handle from the outside. To close taps the patentee employs "a glass plug or conical glass ring fitted round a plug, the "surface of the glass being turned true to fit into a conical glass "seat or ring fixed in the body or fluid way. The glass plug is

" worked by a handle, on the surface of which, inside the tap, a " smaller roller or boss is mounted excentrically, which on turn- " ing the handle to open the tap comes against a roller fixed on a " pin at the end of the rod of the plug, forces the plug down out " of its seat, and opens the fluid way." " By mounting two " rollers excentrically on the handle two glass plugs may be " worked in a two-way tap by one handle." The plug and its seat may be cylindrical instead of conical.

[Printed, 4*d*. No Drawings.]

A.D. 1856, July 29.—N° 1796.

DAVIES, GEORGE.—(*A communication.*)—(*Provisional protection only.*)—" An improved portable apparatus for copying letters and " other manuscripts." The patentee describes the invention as follows:—" The apparatus consists principally of a small roller, " rather longer than an ordinary sheet of letter paper. To this " roller a square piece of india-rubber, cloth, leather cloth, or " other suitable fabric, with a smooth yielding surface, is firmly " attached by one of its edges, one side of the said cloth or " fabric being about equal in length to the aforesaid roller. The " roller may be made solid, of wood, but it is preferred to be " made hollow and of tin or other suitable sheet metal, so as to " be capable of containing writing materials and paper therein. " This apparatus, when the cloth is wound round the roller, fits " into a small hollow metal case, which may (if preferred) be " made large enough in diameter to contain a few sheets of " copying and blotting paper wrapped round the apparatus. In " using the apparatus the cloth is unwound and laid flat on a " table or desk; a letter or manuscript (written with ordinary " copying ink) and a piece of thin damped paper are laid thereon; " the roller is then pressed downwards with both hands and rolled " firmly over the cloth, so as to wrap the cloth with the letter " and damped paper round it, and upon being rolled back it " unwinds itself, and a correct copy of the writing will be found " to have been transferred to the damp paper."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 2.—No. 2036.

BATE, JOHN.—(*Provisional protection only.*)—" Improvements " *in folios, clips,* or files for holding letters, invoices, and other

" documents." The manner, in which the patentee proposes to carry out his invention, is " by attaching a series of metal plates, " say 20, to a back piece, either of metal or leather, similar to a " book back, each plate acting as a guard or loose fly of an " ordinary album. Each of these plates projects slightly in " advance of the former one in a line from the back piece, and to " every one is connected a leaf of pasteboard in such manner as " to be capable of being folded back at its point of junction with " the metal guard. A small tongue of metal is left on each of " the guards, and is turned down at right angles, and on this is " painted or otherwise affixed the letter of the alphabet to which " that section of the folio belongs, so that upon a reference to " the side of the folio, a person will be enabled to open it at once " at the particular spot in which he will find the document he " requires. The metal guards before alluded to act each of them " as a separate clip, a close contact being maintained by gussets " of vulcanized india-rubber, or any other suitable spring, " attached to the sides of the complete folio."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 8.—N° 2086.

CRAIG, THOMAS.—(*Provisional protection only.*)—" Improve- " ments in ruling paper and other materials." The objects sought to be gained by this invention are the more effective working of the apparatus, the being able to use less expensive inks or colours, and the rapid drying of the ink or colour upon the paper. " Arrangements are made for heating the ink or " colour, which makes it run easily, and ensures its marking the " paper, whilst at the same time it dries more rapidly." The ruling pens " are held between metal plates, contrived so as to " nip the pens with their front edges, whilst the screws for closing " the plates upon the pens are not in the way of the dripping " cloth." The dripping cloth is supplied with ink or colour " by " means of small tubes or pipes fitted with stop-cocks, and com- " municating with an ink or color vessel above the pipes, being " capable of being shifted to and fro by hand or otherwise, to " distribute the ink or colour. Heat is applied to the penholding " plates, and is by them communicated to the ink as it passes " over them to the pens, the heating medium being a set of gas " flames or steam introduced into cavities within the penholding

" plates." The paper, after leaving the ruling pens, is traversed forward by an endless web or cloth. The distance to which it is carried, " is such as will allow the ink or colour upon it to dry " before the sheets (if the paper is in sheets) are delivered upon " the receiving board;" and, as heated ink or colour dries more rapidly than cold, a less extent of traverse, and consequently a shorter machine is required. " The receiving board is inclined, " and is formed with a sliding cross bar, which is adjusted to " suit the size of the sheet by means of a screw movement; and " to insure the proper deposition of the ruled sheet, arrangements " are made for blowing two thin films of air, one on each side " of the sheet, as it is being delivered upon the receiving board, " these air blasts being produced by means of a small revolving " fan or other suitable apparatus. The air blasts also have a final " drying effect upon the ruled lines, if they should not be quite " dry by the time the sheets reach the place of delivery, and " this drying effect may be increased by heating the air forming " the blasts."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 18.—N° 2193. (* *)

GOODYEAR, CHARLES, junior. — " Improvements in the " manufacture of penholders, and handles for penholders." " The usual compound of about two thirds caoutchouc and one " third sulphur " is preferred. This is made into sheets, about $\frac{1}{16}$ of an inch in thickness, cut into slips, and wound upon a rod, " either parallel, or tapering to a point." These rods so covered are placed in boxes of pulverized talc, &c., and heated till they become hard, &c. The hollow stem, thus formed, may be used as a handle, or made into a penholder, by introducing a plug of the same material into the larger end, " fitting loosely towards the " end."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 22.—N° 2221.

SELLERS, WILLIAM BUSH, and SELLERS, ABRAHAM.—(*Provisional protection only.*)—" An improvement in 'ever- " pointed' pencil cases." The following is the description of *their invention* given by the patentees:—" Our invention con- " *sists in providing* a reserve or magazine for leads at the

" mouth or neck of ever-pointed pencil cases. We leave space " in the centre or at the side of the reserve for the lead-carrying " point to be withdrawn into or protruded from the case. Our " invention is intended chiefly to apply to such cases as carry a " knife at one end while the point is protruded from the other."

[Printed, 4*d*. No Drawings.]

A.D. 1856, September 22.—N° 2223.

MORRISON, JOHN.—" A new or improved penholder." " In " the interior of a hollow cylinder or tube of metal," to quote the words of the patentee, " I place a semi-cylindrical plate of metal, " between which and the outer tube the pen is held. The said " semi-cylinder is connected with the tube by means of pins or " studs on the opposite edges of the former engaging in slots in " opposite sides of the latter. The said slots are not parallel to " the axis of the tube, but are so inclined thereto, that when the " semi-cylindrical piece is pushed up the tube it is made to " approach and at length to come in contact with the said tube " in consequence of the obliquity of the said slots. A pin or " stud on the back of the semi-cylindrical or sliding piece pro- " jects through a straight slot in the back of the penholder, and " by pressing the said pin or stud the semi-cylindrical or sliding " piece may be moved up or down the tube."

[Printed, 6*d*. Drawing.]

A.D. 1856, October 8.—N° 2351.

CHIOSSO, JAMES.—" An apparatus for damping and affixing " adhesive stamps and labels," which is composed of the following parts:—1, a rectangular chamber for containing the labels; 2, a stem or handle connected to a metallic sliding plate by a spiral spring; 3, prongs " for communicating and equalizing downward pressure " to the plate;" 4, a stop or bolt, " secured to the lower portion of " the stem or handle, for maintaining the spring in a vertical " position;" 5, a projecting flange for retaining the labels in a suitable position for being separately withdrawn, " which is " facilitated by the employment of fluted edges;" 6, studs or set screws, which attach the flange to the chamber " through the " medium of sliding slot openings;" 7, a covered box or receptacle for water, on which is a " guide for causing the stamp to be " placed with greater uniformity and certainty upon the damping

" surface " formed of wash-leather, felt, or other suitable substance, and stretched over an aperture in the cover; 8, a moveable frame for securing the damper; 9, in the centre of the box a vertical tube supplied with sponge; and 10, a screw for uniting the cover with the box and regulating the supply of moisture to the damper.

[Printed, 6*d*. Drawing.]

A.D. 1856, October 25.—N° 2510.

SEXTON, JOSEPH.—(*Provisional protection only.*)—" Improve-
" ments in the construction of caustic holders, applicable also to
" the holding of leads, chalks, and other marking materials."
The holder is made in two parts, the one to receive the caustic or marking material, the other to carry the propeller. " These
" two parts," says the patentee, " I sometimes make tubular, the
" propeller part to fit on to the rear end of the other (which may
" be slit to give it a spring), and by sliding over it to force the
" propeller against the caustic or other substance contained
" therein and push it forward. In this instance the propeller
" stands up from the bottom of a tubular recess, but the pro-
" peller portion of the holder may take the form of a solid
" plunger, and work in the barrel which carries the caustic; the
" propeller rod in that case projects from the extreme end of
" the plunger." " When the holder is adapted for holding
" caustic I provide a screw cap for covering the pointed end of
" the holder. A piece like this may also be used in crayon and
" black lead holders as a receptacle for chalks or leads."

[Printed, 4*d*. No Drawings.]

A.D. 1856, October 27.—N° 2517.

FORBES, HUGO FREDERICK.—(*Provisional protection only.*)—
" An improved copying press," in which the required pressure is given by means of two levers, " fastened one on each side of the
" lower plate which supports the copying book. The pins which
" support these levers are placed a little out of the centre of the
" lower plate. In the centre of the upper and moveable plate are
" fixed on each side other pins which fit into slots in the said
" levers, so that when the said levers are elevated it causes the
" upper plate to rise sufficiently to place thereunder the book, and
" *by depressing* the said levers the upper plate is caused to press

" upon the book to make the copy of the letter. The upper plate " is kept parallel by means of four or more guides, which may be " fastened in the upper or lower plate. The two levers may be " weighted to give the required pressure."

[Printed, 4*d*. No Drawings.]

A.D. 1856, October 29.—N° 2543.

KOPKE, WILLIAM.—" An improved clasp-board," which is " composed of a tablet or board and certain mechanism." The tablet is a flat piece of wood, pasteboard, or any other material, supported by small feet at the corners. The mechanism is of the following description:—A metal shaft, which " traverses the " tablet in contact with its under side and near one of its ends," is confined to its place by staples or other efficient means, or by making the sides of a small box or case serve as bearings. The ends of the shaft " branch out close to the sides of the tablet into " arms or levers " at right angles to the shaft; they may be cast with the shaft or joined to it. To the end of these arms is attached a band of india-rubber or any other elastic substance, " by passing " the band in a stretched form through narrow passages leading " into one or more perforations in the end of each arm." The shaft is cast with a collar (or only part of one) in the middle; this collar is notched across. A metal spring enters the notch for the purpose of keeping the arms immoveable when the papers are confined by the band; the other end of the spring is fixed to the tablet or case. A stud passing through the tablet rests on the spring and is depressed " by pressing with the fingers across the " papers." One or two springs of india-rubber, coiled round the shaft or collar and fastened at the other end to the tablet or case, will then raise the arms perpendicular; the same effect will be obtained " by a steel spring pressing on a bit " placed on the shaft. If the clasp-board be intended " for stout doubled papers," one or two collars are placed near the end or ends of the shaft, and springs operate thereon, but instead of being pressed upon through the board, they are moved by a lateral ear shaped out of them. Modifications of parts of the mechanism:—A lever is placed in the box, " abutting at right angles by one end against the first " step," or notch in the collar, " whilst the other end, reaching to " the end of the box, moves and is supported at middle height of " the box by a pivot " for its fulcrum. Over and across the

middle of this lever and the box a central shaft is placed extending to the sides of the tablet, and having small arms at its extremities and a cam in the middle; a small band of india-rubber keeps the lever suspended and in close contact with both shafts. Again, the central shaft and stud may be dispensed with by making the lever to reach beyond the end of the tablet; the small band will then be suspended from the under side of the tablet. Instead of using two collars, one may be cut with a double set of notches or steps, "the collar extending between them a little way." In this case two levers are required, one end of each "abutting on the "first steps;" their fulcrums are at mid-length and their other ends bent sideways at right angles and extending beyond the tablet. "A small band is lapped from the one to the other at "about half way between the shaft and their pivots." In "the "cheapest" sort of clasp-board there is a square collar, but no levers and no coiled springs; the arms are kept stationary by a flat spring "applied under the shaft" and pressing against the collar.

[Printed, 10*d*. Drawing.]

A.D. 1856, November 5.—N° 2595.

WILEY, WILLIAM EDWARD.—"Improvements in penholders." Two sorts of penholders are described in the specification; the stem of each is of wood, ivory, or other suitable material. One sort is made by cutting a circular groove at the end of the stem, into which the pen is placed. The other sort consists of "two "tubes of metal, and a central core" at one end of the stem. The inner tube is split, its outer end being bent outwards so as to form a flanch. The pen is placed between the core and the split tube, which "is held secure by the turning inwards of the "outer tube."

[Printed, 6*d*. Drawing.]

A.D. 1856, November 29.—N° 2823.

TAYLOR, JOHN GEORGE.—"Improvements in pencil cases." The interior of the pencil case first described is composed of "grooved, screwed, and studded cylinders," thereby combining two actions, the propelling and withdrawing the lead through the *point*, and the point out of or into the outer case. The point is *attached to a grooved* cylinder into which the propeller fits; the

lower part of the propeller is "open tubing" into which one end of the lead is inserted, and on the upper part is a stud which works in a screwed cylinder; this again fits into a slotted cylinder which is fixed to the head of the pencil case, and has a stud round which the slotted cylinder rotates; last is a "loose grooved cylin- "der" by the action of which "the point of the case is with- "drawn into or propelled from the outer case." At the top of the pencil case is a reserve for leads. The interior of the next described "consists of a grooved cylinder with a tube for the "lead, into which tube is fastened a rivet or stud." Over the cylinder is twisted a piece of metal or other material forming an endless screw through which the stud of the propeller is passed; or two pieces of round or half round wire may be bent "round "the cylinder at right angles, so that sufficient space only is left "for the stud to rotate." An outside case may be put over the screw or wire to conceal the movement. The patentee next describes a "rotary slide or fastening for the propeller of pencils "with outside screws;" namely, a tube of metal, ivory, caout- chouc, &c. "with a screw or thread inside, either raised or sunk." A transverse slot is cut in the tube "to allow the stud or tube to "rotate freely in, yet it is close fitted" to prevent any backward motion.

[Printed, 8*d*. Drawings.]

A.D. 1856, December 11.—N° 2940.

LUND, WILLIAM.—"An improved spring clip." The patentee describes eight of the modifications of the various forms in which his invention may be employed. 1. A simple spring clip, the edges of which may be bent into any shape so as to present a smooth surface to the paper, or extended so as to hold in two places. Such clips may be attached to the ends of tubes sliding one within the other and connected by an elastic cord; or a tube may be made in an entire piece with two or three such clips. 2. For sheet music and papers required to open as a book, a staple "is passed through the paper, one at each end, or one in "the centre," and into a slotted stick "encircled by the clip by "which it is retained; this may also be arranged to slide." 3. To hold two or more sheets in the same spring, staples are employed, and two springs, the inner one being slotted, and the outer one embracing the inner one and "being partially divided

" near the middle of its length to admit the connecting stick or " back without causing the opposite end to relax its hold upon " the inner clip and staples." 4. For newspapers; this is similar in appearance to Class 1, but has " corrugations or indentations " formed therein." 5 and 6, shew " a combination of two springs, " one secured upon another;" the outer one may encircle a stick or rod. 7 and 8 are " the adaptation of the spring to the ordinary " plates, known as a letter clip;" the spring forms the joint also, and is applied either outside or between the plates. Any number of springs may be used, " according to the length of the " plates and pressure to be exerted thereupon."

[Printed, 10*d*. Drawing.]

A.D. 1856, December 17.—N° 2991.

THWAITES, JOHN HALL BROCK. — (*Provisional protection only.*)—" A new or improved machine or apparatus for holding " postage or receipt stamps, and applicable wholly or in part to " other similar purposes." The stamps are placed in a box or reservoir; they may be either wound round an axis therein or folded flat. " In the face or on the top of this reservoir is a slit, " through which projects one end of the ribbon of stamps, and " level with the slit is a small table, against the edge of which " the stamps drawn out from the reservoir may be torn off as " required."

[Printed, 4*d*. No Drawings.]

1857.

A.D. 1857, January 6.—N° 54.

TRATTLES, MATTHEW.—" Improvements in tools for cutting " cylindrical and conical forms," such as broom handles, cedar and other pencils, &c. For the manufacture of larger articles a lathe is employed. The mandril is formed hollow with the front end conical or bell-mouthed, and in the side is cut a diagonal slot deep enough to permit the edge of a flat blade to project therein; the blade is secured in its place by clamping screws. There may be more than one slot and blade. A rest added to the *headstock or frame* of the lathe enables the operator to point or

finish by hand the end of the wood after passing through the mandril. A tool for hand use is constructed with only one blade and a pair of handles attached to the mandril. For cutting out smaller articles the patentee proposes "to modify a clasp knife so "that its blade shall act in the manner of the diagonal cutter." On one side of the handle is formed "a conical tubular guide to "receive the wood; this guide is set diagonally to the blade, and "it is cut away so as to allow of the edge of the blade projecting "into the guide." The blade is held fast by a sliding stop piece, and the shavings are discharged through a slot in the opposite side of the handle.

[Printed, 10*d*. Drawing.]

A.D. 1857, January 13.—N° 105.

HINKS, JOHN, and WELLS, GEORGE.—An improvement in metallic pens, which consists in cutting out two or four tongues, on opposite sides, in the blank from which the pen is to be made. These tongues are bent "at or near to a right angle to the plane "from which they are cut," two on the convex and two on the concave surface of the pen. By this contrivance the pen is prevented from coming in contact with the table when laid upon it. The patentees prefer bending the tongues into positions not quite parallel, but "somewhat divergent from the pen."

[Printed, 6*d*. Drawing].

A.D. 1857, January 13.—N° 106.

THURTELL, WALTER, the younger.—Cases in which adhesive labels are moistened and kept in a moistened state distinct and separate. The case of gutta percha, aluminium, zinc, glass, or other suitable material, is formed with an upper and a lower chamber separated by a perforated floor; if the floor be moveable, it rests on supports; if fixed, it is attached to "an external cylindrical "piece" which unites the two parts of the case. The lower chamber contains water with some absorbent, such as sand, porous stone, sponge, &c. "An air space should be left between the surface of "the water or wetted material and the floor." In the upper chamber is "a helical form of wire or other suitable material, "between the convolutions of which the adhesive papers are "placed." The helices may be arranged in various ways according to the shape of the case and its design, whether to be "carried

" about the person or otherwise." To counteract sudden changes of temperature, " a regulating valve may be placed upon each " case, so as to adjust the moisture to the purpose desired."

[Printed, 10*d*. Drawing.]

A.D. 1857, February 16.—N° 451.

WILEY, WILLIAM EDWARD.—" Improvements in the manufac- " ture of metal pens and penholders." The upper part of the pens, above the shoulders, " is made hollow, or in the form of a groove having on either side a web or flanch ;" this hollow portion is slit longitudinally and transversely. The inner surfaces of the nibs are bevilled off from the point outwards, so that the outer edge is thinner than the central parts. The penholders are formed of tubes having several sides, so that the flanches of the pen " should be received into the hollow in a central position across " the widest diameters," or of tubes having grooves at opposite sides to admit the said flanches.

[Printed, 6*d*. Drawing.]

A.D. 1857, February 17.—N° 459.

GOODMAN, JOHN.—(*A communication.*)—" Improvements in " apparatus for holding together letters, music, and other loose " sheets." The apparatus is composed of a portfolio with a wooden or other back, a series of knives or pins, and a sliding bar. To the inside back is nailed or otherwise secured a fixed bar to which the knives or pins are fastened. Near the ends of the fixed bar are rivetted guide rods along which passes the sliding bar perforated with holes corresponding with the rods and knives. The edges of the sliding bar " are turned inwards to afford a " broader surface " for pressing against india-rubber springs, steel springs, or other like arrangements for preventing the bar from slipping. " When sufficient documents have been placed on they " are permanently fixed by driving nails or screws into the " wooden back through holes made in the bar for that purpose."

[Printed, 6*d*. Drawing.]

A.D. 1857, February 26.—N° 562.

WILEY, WILLIAM EDWARD.—(*Provisional protection only.*)—" *Improvements* in ever-pointed pencil cases." The propeller is *made flexible*, or connected with the propelling mechanism by

means of a joint. In place of the coiled tube or screw usually employed in ever-pointed pencil cases a screw is constructed from a thin tube which is placed upon a mandril having a screw thread cut thereon. The tube is pressed into the thread on the mandril " during a rotatory motion given to the said tube and mandril."

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 26.—N° 570.

CASSAIGNES, VICTOR.—" Improvements in the manufacture " of metallic pens and penholders." The object of the patentee is to produce a " central-flexion-pen," that is, a pen which " shall " assume a much more acute angle with the paper than the " holder, and yet that the point of the nibs shall be in or near " the line of the axis of the penholder." To effect this, " the " part above the shoulders is bent so as to bring the lower part " of the pen to the angle desired, whilst the upper part or body " of the pen (which enters the holder) is made at an angle corre- " sponding with the angle at which the holder is held at the " time of writing." The penholders " are made with bends or " elbows and holding parts, so as to hold ordinary pens in " similar positions."

[Printed, 6*d*. Drawing.]

A.D. 1857, March 21.—N° 804. (* *)

BLACKBURN, BEWICKE.—" Improvements in the manufacture " of pens." Each pen is formed " of two pieces of glass or por- " celain set in a frame " of metal or some other flexible material, " composed of two parts, separating from each other in such a " manner that the flexibility of the frame will admit of the points " of the pen separating or expanding and contracting when " writing,"

[Printed, 6*d*. Drawing.]

A.D. 1857, March 25.—N° 835.

HENDERSON, JOHN. — (*Provisional protection only.*) — Improvements in reservoir pens. "The body or cylindrical handle " of the pen," says the patentee, " forms the ink reservoir, and at " the extreme upper end of it is a small hole for the admission of " air to allow the contained ink to flow freely down to the actual " writing point, and this upper hole has a cap fitted over it to close

" the hole when the pen is out of use. The bottom end of the holder to which the pen is fitted has in it a minute lateral aperture for the passage through of the ink. This part of the holder " contains a few threads or fibres of silk, or other suitable con- " ducting material, these threads or fibres being passed through " the bottom hole or inkduct, and through a hole or slit in the " pen, so as to reach the back or convex side of the pen." "To " facilitate the proper fitting of the pen to the lower end of the " holder, the upper barrel portion of the pen has formed in it a " small longitudinal channel or external duct, and the lower " portion of the holder has a corresponding channel in it."

[Printed, 4*d*. No Drawings.]

A.D. 1857, April 11.—N° 1020. (* *)

COURENQ, HENRY FÉLIX.—" Improvements in machinery for " ruling paper." The paper to be ruled is caused to pass in a continuous manner over a cylinder covered with blotting paper or otherwise, and then carried forward by means of an endless apron. The paper is retained on the cylinder by endless revolving cords which bear upon it so as to prevent it slipping. The pen holders are mounted on pivots which oscillate, and are furnished with friction rollers bearing on the main cylinder so as to regulate the pressure of the pens. The pens may be elevated and depressed when required by a lever and counterpoise weights, and the ink required is supplied through pipes furnished with cocks.

[Printed, 10*d*. Drawing.]

A.D. 1857, April 15.—N° 1066.

GOODYEAR, CHARLES, junior.—(*Provisional protection only.*) " An improved manufacture of paper knife," combining in one instrument a paper knife and a book marker. The material employed by preference is " hard rubber reduced to sheets or strips of suitable thickness and softened by heat. The article is stamped out, while the material is soft, by properly shaped punches or dies and finished in the ordinary manner. If ivory, wood, or other substance be used, " where the stamping process is not so " readily admissible," the article is shaped out " in the usual way " of working those materials."

[*Printed, 4d. No Drawings.*]

A.D. 1857, April 20.—N° 1106.

STURGES, RICHARD FORD.—(*Provisional protection only.*)—"Improved manufacture of metallic pens." The invention consists in making pens of the metal aluminium, or of alloys containing aluminium in such quantity that they possess the physical and chemical properties of aluminium. The patentee does not confine himself "to any particular kind of pen, nor to "any method of manufacture."

[Printed, *4d.* No Drawings.]

A.D. 1857, April 22.—N° 1137.

OSMONT, CHARLES ETIENNE.—Improvements in fountain penholders. The stem is hollow, and a piston moves up and down its interior. Through the centre of the piston a double threaded screw works, the top of which, ending in a disc, passes through the upper end of the stem where is a ring for retaining the head "which is slipped on from the other end of the stem and "soldered or otherwise fixed to a plate," this plate having been previously fastened to the disc. Two discs are placed loosely on the screw, one near each end of it, to prevent the piston from "setting fast against the stops at the end of the screw and "turning with it." At the bottom of the stem is attached an ordinary penholder, and from it also proceeds a small tube "curved so as to come in contact with the pen at a point near the "top of the nibs or split." To prevent corrosion the inside of the stem is tinned and afterwards lackered.

[Printed, *6d.* Drawing.]

A.D. 1857, April 23.—N° 1141.

WELCH, GEORGE.—"Improvements in metallic pens and pen-"holders." The improvement in pens, or rather in "the most "ordinary fountain pens," consists in making the tongue on the under side of the pen capable of sliding up and down; this is effected by turning the ends of the tongue over the edges of the pen; but other means may be employed. A "simple and eco-"nomical" holder is made by bending a metal blank into a cylindrical form round a stem. Metal points at top and bottom are forced into the stem, or the top one is forced in and the lower one bent under the bottom of the stem. Or the blank may be cut without points, and the attachment made by pins, tacks, &c.

Or the blank may be cut with points at the sides, bent into a semi-cylindrical form, and the points forced in. Another improvement consists in surrounding that part of the holder and stem which is held between the fingers and thumb with a tube of some soft and flexible material, thereby rendering the penholder more pleasant to handle, and preventing the pen from touching the table, &c. whereon it may be laid.

[Printed, 6*d*. Drawing.]

A.D. 1857, April 28.—N° 1199.

NEWTON, GEORGE. — (*Provisional protection only.*)—"Improvements in copying and other presses." This invention refers to the class of screw presses usually fixed on the top of a table or stand. The patentee reverses this position. He places the press underneath, with the screw downwards, and operates it to press upwards, "thus leaving the top of the stand free to be "used as a table."

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 2.—N° 1246.

WILEY, WILLIAM EDWARD. — "Improvements in boxes or "cases for containing needles, leads for pencils, pens, and other "articles." Each box is made with one, two, or more compartments according to the nature and shape of the articles to be contained therein. On the upper end is a tubular chamber having holes through it corresponding in position with the compartments. Over this chamber is a curved cover which has also corresponding holes. "This cover is capable of rotating over the "upper cylindrical chamber," and is connected with the ends of it by turning the ends of the cover "into the recessed ends of the "chamber." The box may be constructed to hold one or two ink bottles, and "the covers may be arranged to move with suffi-"cient friction to prevent their motion, except when forced to "move by hand, or they may be held by springs or other "catches."

[Printed, 6*d*. Drawing.]

A.D. 1857, May 4.—N° 1255.

WILEY, WILLIAM EDWARD.—"Improvements in ever-pointed "*pencils.*" This invention "is applicable in the making of that

"class of ever-pointed pencils wherein the ends of the leads or "marking material are received and held by the propellers," and, as in the invention for which the patentee was granted provisional protection in February 1857, the stem of the propeller is elastic or made "with a moveable joint between it and the propelling "mechanism." This elasticity is obtained in various ways; the two methods described are, the upper end being hinged or pin-jointed to the other part; or a spring near the upper end. The nozzle is fixed, and the propeller passes through and beyond the point thereof. The nozzle is made in two parts, the lower portion on either side being left unsoldered to allow of the passage of the propeller. If it be made in one piece, the pointed end may be split. Near the lower end of the propeller is a hole for the purpose of readily removing "the last portion" of the lead or marking material.

[Printed, 6*d*. Drawing.]

A.D. 1857, May 7.—N° 1297.

PRICE, GEORGE BROOK.—(*Provisional protection only.*)—An apparatus for affixing stamps and labels. The patentee says:—"Under one modification this apparatus consists of a base block "of wood, in the centre of which is fixed down a solid rect-"angular piece of metal, wood, or other substance, the upper "surface of which projects to a short distance above the level of "the surrounding base, and is of a size and shape corresponding "to the stamp to be used. This block is surrounded by an open "rectangular case of metal open at the top and bottom, with "slots for perforations on the upper surface of the sides to "admit air. The inside of this case or box being nicely fitted "to the block, a space or recess is left all round the fixed metal "block, between the vertical sides of the block and the sur-"rounding wood of the base piece." "Flanges are formed "round the bottom edge of the open case, and suitable springs "are fitted in the recess to bear the latter upwards, provision "being made in the shape of stops for preventing the open case "from being forced too high by the spring action. The postage "stamps are deposited in a pile with their faces downwards in "the open case, so as to rest upon the block inside. The letter "to be stamped is first of all moistened in any convenient way, "and the corner to be stamped is then pressed down upon the

" open top of the case by means of a plate suspended over it, " and acting upon a hinge, for the convenience of filling the box." " According to one arrangement, the base may be contrived as a " water trough, with a sponge dipping into the water and rising " a little above the level of the outside case." " Under another " modification, the inside block is made to ascend whilst the out- " side case remains fixed, the lever for raising it acting upon the " plate suspended over the box, thereby bringing it down upon " the letter, at the same time the inside block is made to rise and " carry the pile of stamps."

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 19.—N° 1408.

OTT, JACOB ULRICH, and UDLOFF, FRIEDRICH AUGUST MORITZ.—(*Provisional protection only.*)—" Improvements in " ruling paper and in the pens or instruments for the same." Each pen is separate, about three inches long, and by preference made of German silver; the metal is " folded or doubled in the " direction of its length and more or less closed at the point " to make a line more or less fine;" it is " left more open higher " up to afford capacity for the ink;" the upper part of the pen " is open (that is to say) the metal is not folded close." The pens are placed " between two pieces of wood, the one having two " saw cuts across near to each other to receive the edges of the " metal," and when they are inserted into " the several pairs of saw " cuts in the one piece," the other piece is screwed against them. " The saw cuts are regulated according to the width of lines " required, or some of the pens may be slid up and out of contact " with the paper." The ink is supplied by simply dipping the pens into a reservoir, and where different colours are required, the reservoir must have suitable compartments; " a guide should " be used in dipping the pens to facilitate and insure accuracy in " the dipping of the whole number of pens at once." The ruling is performed by hand, " using a guide or guides by which the " bars carrying the pens are guided over the paper." These pens " are also adapted for use in machine ruling;" a continuous length of paper " may be traversed through the machine by rollers " or other suitable means, while the pens are fixed and held in " suitable bars." In this case each pen is placed in commu-

nication with a reservoir of ink or colour "by means of threads "of worsted or other material."

[Printed, 4d. No Drawings.]

A.D. 1857, May 22.—N° 1439.

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—"Im- "provements in writing materials," namely, "an atmospheric "inkstand," "a self-feeding atmospheric penholder," and "a "guard balance." The inkstand consists of a reservoir and a hollow flexible ball, cone, or tube, having a cord, spring, or other contrivance so attached to it "as to cause, when pulled or pressed, "compression of the ball, and vice versa, expansion when re- "leased." In the first arrangement mentioned the ball, having an opening at bottom, is placed on the top of the reservoir, and by compression forces ink into a dipping cup at the side of the reservoir. "Pressure may be obtained in many ways," and the ball may be "placed inside the cylinder." In the second "a "moveable cup" is employed, having attached to its bottom a tube which *appears* to pass through the ball into the reservoir. "The ball or cone may be wholly or partially covered, and the "compression caused in various ways." In the third, the ball is inside the reservoir, and the dipping cup outside on the top. "When the ink is either wholly or partially contained in the "elastic material," it is caused to ascend into the cup "by direct "or lateral pressure, by direct slow or quick screw pressure, by "lateral pressure with cords, springs, &c., or by top or bottom "ratchet or screw lever pressure." The stem of the penholder "is composed of aluminium or hard rubber or any similar gummy "substance;" there is an opening at top and bottom for filling with ink; a holder with pen-nib is then slipped on, and the point "inclining to the nib" will keep it supplied with ink, or the point itself may be arranged as a pen. The stem may be so made "that two pens can be in the holder at same time." The guard balance, "which can be supplied to every description of "penholder, is made of aluminium or any other metal, cork, "hard india-rubber, or a soft globe of india-rubber, pearl, wood, "and any other substance or combination thereof, and a piece "of pierced rubber, very thin, may be used to run the penholder "through." One figure "represents a guard and pen made out "of the same piece of metal;" another "shews a balance double

" penholder made out of one or more pieces of the same " material."

[Printed, 6*d*. Drawing.]

A.D. 1857, May 25.—N° 1471.

FOX, WILLIAM.—(*Provisional protection only.*)—" Improvements " in the manufacture of steel pens." The improvements " consist " in causing the sheet steel to be hardened, tempered, and " cleansed or scoured before commencing to cut out the blanks, " and to perform the processes of cutting out the blanks, forming " the side slits, and piercing the blanks; also the bending or " raising of the blanks after such processes of hardening and " tempering."

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 27.—N° 1486.

CLARK, WILLIAM STETTINIUS.—(*A communication from Wm. N. Smith and Peter Hannay.*)—(*Provisional protection only.*)—Improvements in portable copying presses. The bed is a " skeleton frame of cast iron, with rib traces to give great " strength, having four short legs to support it; on the face of " this casting is rivetted a thin board of wood; at each end of " this casting is a short journal or wrist, on each of which a link " of hooked form is firmly keyed with a wrist projecting laterally " from the upper end of each." The platen is somewhat similarly constructed. Two levers " are connected by a rod extending from " one end across the top of the platen; the lower end of the " levers is fitted with wedge-shaped boxes, which are adjustable " to or from each other, and held at any distance apart by a " tapering clamp, being tightened against them by a screw and " nut."

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 30.—N° 1524.

CLARK, WILLIAM STETTINIUS.—(*A communication.*)—(*Provisional protection only.*)—" Improvements in machinery for the " manufacture of an instrument for sharpening watch-cleaning " sticks used by watchmakers, said instrument being also ap- " *plicable to the* sharpening of small wooden cylinders for other

" purposes, such as lead pencils, &c." The "sharpener" consists of a hollow cone of metal, open at the base, and having a handle at the top. A steel blade extends from the top to the base; there is a slot under its cutting side. When a pencil is introduced into the sharpener and turned round, the blade will plane it to a fine point. The slot enables the shavings to escape. The invention relates to an improvement in the apparatus for casting the above-described sharpener, and consists in the arrangement of a gauge for the purpose of varying the depth to which the edge of the blade shall be placed in the core of the mould before casting, and of a spring holder and sliding plates which hold the blade in the mould and form the slot by shutting off the composition from the front edge of the blade.

[Printed, 6*d*. Drawing.]

A.D. 1857, June 27.—N° 1805.

THURBER, CHARLES. — An improved kaligraph or writing machine. This machine is adapted for such persons as "from " debility or other causes cannot command the motions of the " fingers or carry the hand steady enough to form a small hand." The writer traces with a stylus an imaginary letter, "about five " times as large as he wishes to make the writing on the paper." Upon a desk or table is erected a standard having its base formed with an opening under which a tablet and sheet of paper can move on suitable ways. The standard supports the shaft of a screw forming a pivot for the upper end of a stem whose lower extremity is pointed and rests in a conical cavity in the base of the standard. Of four rods (portions of which form a parallelogram in whatever direction moved) one of the longest is jointed to the stem; another of equal length is jointed to this one, and carries at its other end the stylus or tracer; the shortest is jointed to the first, and the remaining one to the second and to the shortest; at this last junction the pen is placed. The ways on which the tablet slides are two rods with pieces attached to them; these pieces turn on screw pins, and have springs to hold them in place. The pins pass into nuts, and are adjustable in slots in the tablet. On the under side of the tablet is a stud to which a cord is fastened. The cord passes round a guide pulley, and is attached at its other end to a ratchet wheel which may be operated upon by various arrangements. The pen consists of a tube with a valve at

its bottom, where the nib is placed. A rod is attached to or rests on the valve, and extends into the upper part of the tube, in which a spiral spring tends to keep the valve closed. A joint in the outer case is made to unscrew for the purpose of supplying ink. The ink reservoir may be arranged to rest on the shortest rod when the pen is in place.

[Printed, 8*d*. Drawing.]

A.D. 1857, July 3.—N° 1857.

RUEGG, EMANUEL.—"An improved calendar inkstand." The calendar is provided with four to eight cylinders, which are placed in a box or chamber at the back of a tablet or dial plate of metal, wood, cardboard, or other suitable material. In the tablet openings are made covered with glass, and behind these are tables containing the names of the days of the week, the date, month, and year. These tables are passed round the cylinders, and those which indicate the year, month, and date are moved by means of handles or knobs; the others are immoveable. The cylinders are placed in either a vertical or horizontal position. The tablet is secured to the chamber by screws, and the calendar, which rests on supports, is fixed to the inkstand by screws, solder, or other means.

[Printed, 6*d*. Drawing.]

A.D. 1857, July 23.—N° 2022.

DEAKIN, WILLIAM, and PHILLIPS, WILLIAM.—Improvements in machinery for the manufacture of metallic pens and holders, which consist in the following arrangement of tools and movements in connection with a fly press. To the bolt a "false "nose" is attached by screwing, tapping, or otherwise, and to the nose are fastened the cutting out, piercing, and side slitting tools. At the top of the screw which raises and lowers the bolt a cam is fixed "having the part where it is attached to the screw "thickened up." At the back of the press is a lever working on a fulcrum which is supported between open ears secured to the press by a screw, and which is capable of being raised or lowered for the sake of adjustment. At the top of the lever is a friction roller, which is kept constantly in contact with the cam by means of an elastic band or helical spring connected to the top of the lever and to any part of the top of the press. At the lower end of

the lever is a carrier moving from right to left or left to right with each motion of the fly handle. By the former motion the blank last cut out "is carried forward by a projecting bit formed on " the nose of the carrier " along in a groove "until it is stopped " by two radial stops," when it is operated on by the downward action of the piercing and side-slitting tools. At the termination of the groove is a magnet which retains the blank, and to overcome the attraction "the piercing tool goes a little further than " would be necessary for making the pierce hole," consequently it lifts the blank with it. A forceps is brought forward and seizes the blank. The pierce tool rises, holding the blank until the latter comes in contact with a metal piece "of two thicknesses and of " sufficient distance apart to allow the piercing tool to work " between them." The blank is then freed, carried off by the forceps, and dropped into an inclined channel, down which it slides into a receiver. A guide, underneath the top of which the strip of metal passes from which the blanks are cut, is screwed to the bolster or bed. The forceps is formed and the blank freed from it as follows :—An arm is attached to the bottom of the lever by a bar, and to the left hand of this arm is united a circular lever, the short end of which passes between two vertical pins secured to the under side of a shaft. As the circular lever moves the shaft advances or retires, working in guides. The front end of the shaft forms the forceps, and the blank is forced from it by clips secured to the front guide. To throw the blank off the face of the cutting out punch two vertical holes are drilled through it. Two pins fit loosely therein and slightly project beyond the surface. Through the shank is formed a slot, through which a spring passes having an end fastened to either pin. The press may be worked otherwise than by hand, and by modifying the parts more than one pen or holder (of every variety of shape) may be made at one time.

[Printed, 1*s.* Drawing.]

A.D. 1857, July 24.—N° 2028.

NEEDHAM, JOSEPH.—"Improvements in fountain pens." The external case is the inkholder; it is filled from the top, where it is provided with a cap and made air-tight by means of an india-rubber washer. Into the opposite end of the case is screwed a conical nose piece in which is an air hole. The lower end of the nose piece is reduced to an orifice of such diameter that the ink

will not flow therefrom otherwise than by the pen. The pen, which is somewhat narrower than ordinary ones, is placed in the nose piece without touching the sides of the orifice, and with the point projecting a little beyond it; it is affixed to a stem and supported at the other end by a bridge piece, both stem and bridge piece being inside the case. A helical spring is coiled loosely round the stem, the upper end pressing against the bridge piece, the lower against a shoulder or valve faced with a washer. The part of the stem to which the pen is affixed "is tapered and "triangular in its cross section, so as to fit somewhat nearly the "inside of the nose" at its upper end. The other end of the stem "is of a particular form in cross section, so that it shall only "fit and be introduced in one position." The case and nose should be of gold or silver, or coated inside with one of these metals to prevent corrosion. A cap to enclose the pen when not in use is fastened to the nose by a bayonet joint, and a washer fitting on the conical part renders the whole air-tight.

[Printed, 8*d*. Drawing.]

A.D. 1857, September 22.—N° 2452.

WORSSAM, GEORGE JARVIS.—(*Provisional protection only.*)—"An ink self-supplying penholder," which the patentee describes as consisting of the following parts:—"A cylinder or reserve to "contain ink; a tube or conductor screwed to cylinder to convey "the ink to the pen; a valve or regulator to regulate or shut off "the ink in tube or conductor, also attached to a plate with "a spiral spring; a cap screwed on end of cylinder and connected "to valve or regulator, with plate and spiral spring for admission "of air in cylinder, and also to regulate and shut off the ink in "tube or conductor; an ordinary pen with shield to protect it."

[Printed, 6*d*. Drawing.]

A.D. 1857, September 30.—N° 2511. (* *)

WAINWRIGHT, GEORGE JAMES, and BRADBURY, CHARLES TIMOTHY.—(*Provisional protection only.*)—"Improvements in "machinery or apparatus for making or manufacturing tubes or "partial tubes used in spinning and doubling machinery, and for "holding the same ready for use, part of which machinery "is applicable to making pens, penholders, and similar pur-"*poses.*"

The inventors make the following statement:—"We fix on a "suitable frame or stand two or more fluted or plain rollers "revolving in contact, which may be driven by any suitable "means or power, with a second or sliding motion given to one "of them by a cam, tappet, or other suitable means well known "to mechanics. By the first or revolving motion, when the "metal is placed between the said rollers, it is formed into the "proper shape, either tubular or partially tubular; and by the "second or sliding motion it is pushed from the machine."

"We also employ a self-acting or partially self-acting feeder, "to supply the rollers with the pieces of metal to be shaped."

[Printed, 4*d*. No Drawings.]

A.D. 1857, October 14.—N° 2626. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Leon Louis Honoré Berton.*)—"Improvements in producing figured paper to "be used in teaching writing and drawing."

The invention relates to a system of producing "letters, "figures, devices, or designs to be used as a means of conveying "elementary instruction in writing or drawing," and "consists "in placing the paper to be operated upon with its face upon a "zinc plate, such plate having the described letters, figures, "devices, or designs engraved thereon, either in relief or in "intaglio. A second metal plate, having a smooth surface, is "then placed upon the back of the paper," and the whole is passed through a press. "The paper on being removed" "will "be found to bear upon its surface an exact copy of the device "engraved upon the plate. The mode of using these prepared "sheets of paper consists in simply tracing or following the lines "or marks of the design or device with a lead pencil or other "marking instrument."

[Printed, 4*d*. No Drawings.]

A.D. 1857, November 10.—N° 2842.

HARRINGTON, JOSIAH.—"Improvements in apparatus for "pointing pencils or marking instruments." The apparatus consists of a wooden frame having in it a conical recess for receiving the end of a pencil and a bevilled groove, into which is inserted a plate with a series of slots sharpened on one or both sides and notches on its upper and lower edges. The plate is

held in its position in the groove by a spring catch, the end of which drops into one or other of the notches. Both frame and plate may be made of a cylindrical form. If the recess be made in the circumference of the cylinder, the cutting plate must be mounted on an axis and secured in its place by a screw which enters small holes drilled in the edge.

[Printed, 6*d*. Drawing.]

A.D. 1857, November 19.—N° 2910.

CURTIS, JOHN EDMUND BURNINGHAM.—(*Provisional protection only.*)—"Improvements in apparatus for filing papers and "documents." "Each apparatus," to quote the patentee's own words, is made with a "flexible file of cord or other suitable "material, which is constructed in such manner as readily to be "divided or severed in its length, and again connnected in order "readily to admit of an intermediate paper or document being "removed when the two parts are separated, so as to leave the "other papers or documents on the two parts of the flexible file, "the ends of the two parts of a flexible file going again together "and again acting as a single file, till an intermediate document "be again required to be removed without disarranging the other "papers or documents on the file. One end of the flexible file "is made fast to a paper board or suitable surface, the other is "provided with a point to penetrate the papers or documents, "and when a second or more paper boards are used with the "same file, the flexible file is passed through such paper boards. "The fixed end of the flexible file may be fixed to one end of a "box or a drawer, or other receiver for papers or documents, "and the several intermediate paper boards may be formed to fit "across such receivers. The parts of a flexible file may be joined "by screw or other suitable couplings."

[Printed, 4d. No Drawings.]

A.D. 1857, November 20.—N° 2916.

HINKS, JOHN, WELLS, GEORGE, and PETIT, JOSEPH LETIERE.—(*Provisional protection only.*)—Improvements in metallic pens.

"In making metallic pens according to our invention," say the *patentees*, "we form that part of the sheet of metal of which the "*point is made of* a concave instead of a convex form, that is to

" say, the writing end of the pen is curved in a direction contrary " to that of the body of the pen, so that in writing the end of " the pen presents a convex figure to the paper, instead of a " concave one as in the ordinary pen."

[Printed, 4*d*. No Drawings.]

A.D. 1857, December 9.—N° 3045. (* *)

WESTENDARP, CHARLES.—" Preparing a material as a sub- " stitute for ivory, which he proposes calling ' artificial ivory.' "

Among the applications to which this artificial ivory is to be put is its use as a material for rulers, paper knives, knife and other handles and " other similar purposes for which ivory, bone, coral, " or such like articles are generally used." The material is composed of ivory, bone, wood, glass, cotton wool, or other similar articles, powdered or in shavings mixed with gum, dammar gum, copal, resin, gum shellac, gum sandrac, wax, or other resinous and glutinous materials, and mixed together under pressure and heat. The paste thus formed is moulded into the required form.

The material is capable of being " turned, carved, sawn, and " polished like ivory;" it may also be " coloured, dyed, or stained, " during the process of manufacture or afterwards."

[Printed, 4*d*. No Drawings.]

A.D. 1857, December 18.—N° 3111.

DARLING, SAMUEL.—(*Partly a communication from Joseph U. Strange.*)—" An improved pencil sharpener."

This instrument differs from the ordinary conical pencil sharpener in having a second smaller hollow cone " whose axis " is at a right angle " to that of the larger one. This cone is armed with a separate knife; or the knife of the larger cone may be made to extend with one of its ends into the smaller one, which end is sharpened to form a cutting edge. The wood only of the pencil is cut away in the larger cone; the lead is pointed in the smaller one. The patentee claims also the arrangement of a lead receiving recess in the ring or handle of the instrument, which recess is in connection with the throat of the wood reducing cutter.

[Printed, 6*d*. Drawing.]

A.D. 1857, December 19.—N° 3115. (* *)

NEWEY, THOMAS, CORBETT, JOHN, and PARKES, WILLIAM HENRY.—(*Provisional protection only.*)—"An improved method "of treating or coating steel pens and penholders" to prevent oxidation, also applicable to "other articles of iron and steel."

A plate of tin is suspended in a hot solution of bitartrate of potash, "which tin is connected by a copper wire to the zinc" [copper?] "of a voltaic battery;" "the pens, penholders, and "other articles" are suspended "in the solution by copper wires, "which connect them with the copper or negative metal" [zinc or positive metal?] "of the battery; in a short time the "articles are coated with a coating of tin, which gives them a "silver-like appearance, and preserves them from oxidation. The "surface of the plate of tin suspended in the solution must, in "the first instance, be greater than the surface of the pens or "other articles. By this means the solution will become well "saturated with tin, after which equal amounts of surface may "be employed. Instead of pure bitartrate of potash, red tartrate "of potash may be employed, or caustic potash may be employed, "either of which in solution may be used instead of the solution "first described."

[Printed, 4*d*. No Drawings.]

A.D. 1857, December 24.—N° 3157.

ADDERLEY, SAMUEL HENRY.—(*Provisional protection only.*) —Improvements in the manufacture and ornamentation of pencil cases, penholders, and other tubular cases. A rod or mandril is employed somewhat less in diameter than the pencil case to be made, of any convenient length, and either cylindrical or prismatic. Upon the mandril are coiled alternate layers of linen or cotton fabric and paper, both being overspread with paste. "After the "tube thus made is dry, its figure is perfected by drawing it upon "its mandril through a suitably formed draw plate. The tube is "then saturated with linseed oil and dried in a stove, afterwards "varnished and dried again. It is next ornamented by japanning "or varnishing, gilding, and painting, or by attaching thereto by "means of gold size, or other adhesive material, pieces of shell "either alone or combined with metal." The tube is made into a pencil case by the introduction of the usual mechanism. "The

" same method of construction and ornamentation is applicable " to penholders, reserves or cases for leads, needle cases, inkholders, " and other tubular cases."

[Printed, 4*d*. No Drawings.]

1858.

A.D. 1858, January 1.—No 7. (* *)

JOHNSON, JOHN HENRY.—(*A communication from Louis Charles Riattot.*—" Improvements in penholders, pencil cases, " and other articles sliding in cases of a like nature." In an ever pointed pencil, " that portion of the holder which carries " the leads, and slides inside the case, is connected by means of " an internal india-rubber or helical spring with the top end of " the holder;" " a stud or button, attached to one side of the " slide," " draws out the lead ready for use, and when it is drawn " out it is retained in that position by means of a spring catch " inside the case, which is released by simply pressing it with the " nail, whereupon the internal spring instantly draws back the " pencil inside the case."

[Printed, 6*d*. Drawing.]

A.D. 1858, January 7.—No 31.

DE WINTON, GEORGE JEAN DE WINTON.—(*A communication from Henry Genhart.*)—(*Provisional protection only.*)—" Im- " provements in copying apparatus." This invention consists of two or more rollers " connected to one end of a system of levers " of the character known as the 'lazy tongs' arrangement, the " other end of such system of levers having a strap or band " secured thereto, which may be passed under the foot or hooked " on to a nail or hook so as to cause the elongation of the " system of levers (when held firm at the roller end thereof), and " consequently bring the rollers close together, so that a book " or case containing the copying paper, &c., with letters, &c., to " be copied being placed between the rollers and pulled through " them, will copy whatever may be submitted to the operation. " The book to be used should be provided with handles to faci- " litate its being pulled through the rollers."

[Printed, 4*d*. No Drawings.]

A.D. 1858, January 13.—N° 55.

ROBERTSON, PATRICK. — (*A communication.*) — (*Provisional protection only.*)—"Improvements in inkstands." The invention is described as follows :—"The ink vessel or holder is made of "vulcanized india-rubber, or other suitable flexible and elastic "material. Through the upper part of the vessel the hollow "stem of a glass or other suitable dipping cup descends, so that its "lower end is pressed on the flexible elastic bottom of the vessel, "which forms or acts as an elastic valve to close the bottom "of such hollow stem of the dipping cup, which gives way and "allows the ink to pass when pressure is applied to the ink "vessel."

[Printed, 4*d*. No Drawings.]

A.D. 1858, January 19.—N° 92.

CAPON, PHILIP.—(*Provisional protection only.*) — "Improve-"ments in apparatus for binding together pamphlets, letters, and "other documents." India-rubber springs are placed within a hollow back or frame, in front of which prongs are disposed, and on the face of which a pressing bar slides. From this bar studs or pins project through and traverse in slots; on these studs the springs exert the required pressure to force the loose sheets on the prongs, and to bind them firmly the springs are distended over the studs and extended a sufficient length on each side for the purpose, the ends being attached to suitable pins fixed to the frame. "When the sliding bar is at its highest point of eleva-"tion, it is retained by a spring catch or detent as usual while "introducing the sheets to be held." The springs may be other-wise disposed to effect the same object. "The binding apparatus "is placed within a suitable cover to enclose all the papers as "usual."

[Printed, 4*d*. No Drawings.]

A.D. 1858, January 20.—N° 97. (* *)

MUIR, WILLIAM.—"Improvements in stands for letter-copying "presses and other small machines."

The invention consists "in making the bottom plate of letter-"copying presses with recesses or holes to receive the legs of the *stand, also in making* such recesses or holes in a plate or frame

" on which a copying press of the usual construction is placed " and held between ribs or otherwise." The legs of the stand are made by preference of iron, and may be connected by stretchers or by the supports for the drawers, or by either or both. " Such " stands may also be employed to support" " other small " machines, such as have hitherto been fixed upon tables."

[Printed, 10*d*. Drawing.]

A.D. 1858, February 10.—N° 248.

CLARK, WILLIAM STETTINIUS.)—(*A communication from William M. Smith and Peter Hannay.*)—Improvements in portable copying presses. For a description of the bed of this press the reader is referred to an Abridgment dated May 27, 1857. The platen is constructed similarly to the bed, but without any legs; and its links are suspended on the wrists and turn downwards so as to interlock with the links keyed on the bed. The levers, wedge-shaped boxes, and tapering clamp are described in the before-named Abridgment. The boxes are bored, and fit on the wrists, which project from the links of both bed and platen. The bed is provided with one or more uprights having slots in them, through which the arms of the platen pass, " with a shoulder on " the inside, and a small pin through them on the outside of the " upright;" the platen is thus prevented from moving laterally, but is capable of rising or falling, or of assuming a slanting position, in consequence of the length of the slots. A variety of modes of adjustment of the links, levers, and boxes may be used without altering the principle of the invention.

[Printed, 6*d*. Drawing.]

A.D. 1858, February 16.—N° 295.

DAFT, THOMAS BARNABAS.—" Improvements in instruments " for rubbing out pencil-marks and for sharpening pencils." The frame of this instrument is a cylinder of wood, or a block of any other form. Through the wood a hole is bored in which is fixed the sharpener. The frame is wrapped round with a strip of india-rubber in a plastic or doughy state; rings, or ends of india-rubber, are then applied, and the article is complete. The sharpener is manufactured from a blank of steel of size and shape to form a hollow cone, one edge of which is sharpened and adjusted so as

to cut a pencil when inserted and twisted round. The above instruments may be made separate or combined.

[Printed, 6*d*. Drawing.]

A.D. 1858, February 24.—N° 370.

FOSTER, WALTER KITTREDGE.—" An improvement in the " manufacture of blades for pencil sharpeners, or other articles of " like nature." The object of this invention is to support small pieces of metal and aid in their reduction to wedges or knife blades under the action of a grinder or grinding wheel. For this purpose the patentee forms in the upper surface of a plate of metal one or more series of recesses " triangular in cross section," and " parallel to each other, or in such other manner as circum- " stances may require." Each recess is intended to receive a knife blank, which " by resting against the two sides of the recess will " take an inclined position with respect to the top surface of the " bed or holder. This holder, so made, is to be used under a " grinding stone or grinder, which should be made to revolve in " such a direction, while it is operating against a knife blank, " that such knife blank shall be forced by the friction of the " grinder against the vertical side of the knife recess." After a blank has been reduced on one side, " it may be turned over, and " that side placed downward within the recess, so as to bring the " other side of the blank uppermost."

[Printed, 6*d*. Drawing.]

A.D. 1858, March 23.—N° 605.

WILEY, WILLIAM EDWARD.—" Improvements in ever-pointed " pencils." The first pencil-case described by the patentee is composed of three tubes; namely, an external case with a cap fixed at the upper end, a middle tube to which the nozzle is attached, and a tube inside the middle tube containing " several " lengths of lead " and the propeller. The edges of the middle and inner tubes are not soldered together, but " have a tendency " to spring together " when free to do so. There is a slot in the upper end of the middle tube which the stud of the propeller enters; hence the inner tube may be moved up and down the middle tube the length of the slot, the object of which is to bring *back the pro*truding portion of the lead within the nozzle. The

nozzle may be made as described in Specification 1255, May 4, 1857, or otherwise. The lower end of the inner tube is somewhat smaller in diameter in order to hold the lead more tightly than at the other parts, and the shape and make of the tube may be greatly varied. In a second description of pencil-case the inner tube is dispensed with; the propeller has an elastic tubular end to receive the upper part of the lead, and the sliding in this arrangement "will be sufficiently resisted by the interior and "exterior tubes, by their edges closing on and holding the forcer "wherever it may be left." Another part of the invention consists in an opening through the nozzle near the point, by which means the last portion of the lead may be forced out of the holder by introducing a pointed instrument through the hole.

[Printed, 8*d*. Drawing.]

A.D. 1858, March 27.—N° 656.

BOUSFIELD, FREDERICK.—Improvements in apparatus for writing in duplicate. The apparatus is made with a sloping surface, which is hinged to a board or stand and which can be placed at any angle by pieces hinged to the slope and entering notches in the stand. Across the slope is a slit, and a portion of it both above and below the slit turns on hinges. At the back of the slope and at right angles thereto are two projections in one of which are holes and in the other slots. A roller covered with blotting paper has one end of its axis passed through one of the holes, while the other is kept in one of the slots by a pin eye. The paper to be written upon is passed down through the slit, round the roller, and up again through the slit; each end is then secured in a spring clamp. The clamps are connected by bands of india-rubber which pass round the back of the slope and over a rod fixed to the projections. The writing is performed by means of two pens held in holders fixed in the same stick; and before commencing, the upper clamp should be moved near to the slit, leaving sufficient space for a line of writing between them. If it be desired to produce three copies at the same time, there must be two slits in the slope, and the paper passed through each of the slits, round the roller, and up again as before described. By a suitable arrangement of clamps and bands each copy may be made on a separate paper.

[Printed, 8*d*. Drawing.]

A.D. 1858, April 22.—N° 880.

BISHOP, WILLIAM.—" Improvements in machinery or appa-
" ratus for ticketing or labelling spools, bobbins, or reels, for
" adjusting the size thereof for sampling patterns, for printing
" labels or tickets, affixing postage or other stamps or labels, for
" cutting their edges, and dividing them into given quantities and
" sizes." There is no special description given for affixing post-
age stamps. One sentence in the Provisional Specification reads
thus:—" For gumming the bobbins I place blocks of india-
" rubber (hollow or otherwise) in tubes of sufficient substance to
" give a run of gum, which may be put on as printer's ink on
" type, or the ticket may be wetted in the tube by saturated flags
" of calico or other material; this treatment may also with slight
" modification be applied to postage stamps and labels." Towards
the end of the final Specification it is written:—" Postage stamps
" are enclosed in a tube of the same shape, and after being
" damped are delivered singly as required, the operation being
" the same as described in reference to the ticketing of spools; the
" tube and its contents are placed in any convenient holder." In
the description of the tubes the patentee says:—" On the upper
" part of these tubes are placed caps having indentations formed
" on the upper edge to prevent the tickets which are placed in the
" tubes from passing more than one at a time when forced up by
" the plugs." For a damper he uses "a box having a water
" tank inside and slots cut in the side thereof, with rollers to slide
" up and down in said slots; over these rollers is passed a piece
" of woollen cloth or other suitable fabric, having weights affixed
" at each end, so that as the cloth is required to be kept more or
" less damp, so the rollers can be let up and down;" a flat pad
is then laid on the top to be moistened, after which it is "trans-
" ferred to the ticket holder."

[Printed, 10*d*. Drawing.]

A.D. 1858, May 21.—N° 1132.

HENRY, MICHAEL.—(*A communication from Messrs. Vasseurs and Houbigant.*)—" Improvements in the manufacture or preparation
" of ink and paper, to adapt them for copying purposes; in pre-
" serving food, skins, and hides; in rendering lint, vesicatory
" *paper, and* textile fabrics absorbent; and in treating mortar,
" *cement, and other* matters, in order to keep them in a damp

" state." Although only the first part of these improvements relates to the present series, the whole title is given, because the various improvements are effected by the application of glycerine, by utilizing " its properties of absorbing and retaining atmo- " spheric humidity." There are four formulæ for inks; 1. for " a good ink " :—mix 6 parts of glycerine with 2 parts of crystallized sugar (or sugar of milk or honey), adding sufficient pure water to melt the sugar; " the liquid should be mixed with a like " quantity of common ink." 2. for " an alkaline copying ink " :—take " decoction of logwood, @ 8 degrees, 5 parts, sugar 3 parts, " gum arabic 2 parts, glycerine 5 parts, adding, as a coloring " solution, till a violet hue (couleur pensée) is obtained, water " 100 parts, common potassa 20 parts, flowers of sulphur 3 parts ;" melt the whole in a cast-iron pot, add 10 parts of tanned skin parings or cuttings, and boil to dryness, " stirring well to keep it " from burning ; " after taking it off the fire, add 200 parts of water, and express and filter the whole. 3 and 4 are for " durable " and permanent inks ;" 3. :—mix well 3 parts of white glycerine, 3 parts of purified white honey, and 10 parts of violet-black or other colored ink. 4. :—mix and stir up well 4 parts of white glycerine, 4 of purified honey, 10 of Robertson's ink, ¼ of powdered gum arabic, and one or two drops of strong solution of deutochloride of mercury. The parts in 3 and 4 are " by weight," and the mixtures are to be left " to settle two or three days before " using." If, in taking copies from ink No. 3, " thicker charac- " ters are produced than those in the original, the proportions of " glycerine and honey may be respectively reduced to two parts " each, or another quarter by weight of one part powdered gum " arabic may be added." The patentee adds a recipe " for puri- " fying honey before employing it in manufacturing these im- " proved inks." The paper is prepared by introducing glycerine into the pulp, or by damping the paper therewith, when manufactured. Unsized paper is " rendered more effective by glazing, " pressing, or satining it." By using these inks and paper " writings may be copied without the pressing or damping now " adopted for the purpose."

[Printed, 4*d*. No Drawings.]

A.D. 1858, May 31.—N° 1222.

SNOW, GEORGE KNOWLES.—(*Provisional protection only.*)—A machine for affixing postage stamps. A frame is constructed with

two standards for supporting the fulcrum shaft of a hand lever; it is also made with a ledge, and two sunken spaces, one containing an elastic bed, the other sponge or any absorbent substance. The lever carries a platen whose inner edge operates or is provided with a cutting edge, or a means of causing another cutter, arranged at the rear of the elastic bed, to cut a postage stamp from a strip when placed between the bed and platen. On the shaft is a feeding roller directly over the frame, and furnished with an elastic periphery and a ratchet. A spring pawl extends from the lever and works in the teeth of the ratchet. The lever may also carry a small drum on which is wound a strip of postage stamps. Two parallel guides arranged on and projecting above the frame complete the machine.

[Printed, 6*d*. Drawing.]

A.D. 1858, June 7.—N° 1284.

HICKS, ROBERT.—A composition to be employed as black lead. This invention "consists in forming a composition of black schist, "carburet of iron combined with other substances known in "Devonshire and elsewhere by the name of shining or shiny "ore, and plumbago of commerce, and with or without soda and "lampblack. Or in forming a composition of black schist and "carburet of iron, with or without soda and lampblack." The patentee states the proportions of the said ingredients which he uses (but does not limit himself thereto) "for polishing stoves, "grates, and other iron articles, as also for protecting the same "from rust;" also "in making crucibles, furnaces, and stoves," and "in lieu of black lead in making pencils." In the last case, the ingredients are reduced to a fine powder, thoroughly mixed with a small quantity of water, and then put into a strong metallic mould and subjected to considerable pressure. The composition is afterwards sawn into slabs, baked in a kiln or oven, heated gradually, and retained there long enough to harden to any degree required.

[Printed, 4*d*. No Drawings.]

A.D. 1858, July 10.—N° 1553.

PORECKY, ALEXANDER.—(*Provisional protection only.*)—Improvements in the manufacture of certain articles of whalebone, *horn, &c., or the artificial* imitations thereof. The articles first

mentioned by the patentee are "busks for lady's stays." To manufacture these he gives to strips of whalebone, &c. a fluted or corrugated form, "at the same time forming channels through "which perspiration may pass off, and air be admitted to the "body." He then describes the manufacture of "walking sticks, "whips, fishing rods, penholders, and similar articles of a hollow "or tubular form." Strips of the material are bent or pressed into a plain, fluted, ornamented, flexible or rigid tube, or some longitudinal section thereof. "The said hollow articles may then "be either wholly or partially filled with a suitable composition "or material; or they may be left unfilled, thereby allowing of "their sliding one over the other like a telescope if desirable."

[Printed, 4*d*. No Drawings.]

A.D. 1858, July 17.—N° 1617. (* *)

PIDDING, WILLIAM.—(*Provisional protection only.*)—"Im-"provements in securing and forming envelopes."

The ends of the tongues of the envelopes have a seal in wax fixed on the outside over the part to which the gum is applied, thus preventing any tampering with the gum by the agency of steam or water.

[Printed, 4*d*. No Drawings.]

A.D. 1858, July 22.—N° 1654. (* *)

GAMMON, CHARLES.—"Improvements in the fastening of "envelopes and letters."

Two pieces of metal or other suitable material are constructed of "such a form that one piece can enter or latch into the other, "but cannot be again withdrawn." One piece is attached "to "one flap of the envelope, and the other piece to the other flap "or to the other flaps. The envelope is fastened by placing the "two parts of the catch together, and it cannot be again un-"fastened without destroying it." It is preferred "to attach "the second piece of the catch in such a manner that it secures "all three flaps of the envelope, so that the envelope may be "quite secure without trusting to any gum or cement. The "parts of the catch may be attached by eyelets or rivets." These fastenings "may also be applied to letter paper so as to fasten "letters without envelopes."

[Printed, 8*d*. Drawings.]

A.D. 1858, August 3.—N° 1762.

JOHNSON, JOHN HENRY.—(*A communication.*)—"Improve-
" ments in inkstands." This invention "relates to a peculiar
" construction and arrangement of inkstand whereby the evapo-
" ration and consequent clogging or thickening of the ink is
" avoided, whilst at the same time the receptacle is so constructed
" that there will be no danger of spilling the ink should it be
" accidentally overturned." The body of the inkstand may be wholly or partially of glass, metal, or other suitable substance. At the bottom is a well or reservoir into which a plunger fits fluid-tight. Up the centre of the plunger and opening at the top into a "trumpet mouth" dipping cup is a passage having its lower portion considerably contracted. The upper part of the plunger has a stopper formed on it which fits fluid and air-tight when the plunger is down in the neck of the inkstand. Notches or slots extend "half way down the sides of the plunger and
" stopper, and the sides of the well and neck respectively," and by turning the stopper and plunger (without elevating them) until these notches coincide, the dipping cup will be emptied; a further turn will render the plunger fluid-tight in the well. The same results may be obtained by a modification of the lower portion of the plunger. It "may be expanded and provided with
" a small nipple, which latter only would require to be ground to
" fit a corresponding depression in the bottom of the well;" or a small cylindrical opening or chamber may be formed in its under side, "which chamber fits fluid-tight over a nipple or
" piston formed on and projecting internally from the bottom of
" the inkstand."

[Printed, 6*d*. Drawing.]

A.D. 1858, August 5.—N° 1780.

MOSELEY, WALKER, and CHAMPNESS, WILLIAM SWAIN.—(*Provisional protection only.*)—"An improved self-filling reser-
" voir penholder." The reservoir is a tube of hard india-rubber, metal, glass, or other suitable material, smaller at the end where the holder is fixed, and smaller still as it approaches the pen (where it terminates with a fine hole), and provided at the upper end with a flexible chamber (of any shape) of india-rubber or *other* elastic substance. To regulate the supply of ink to the *pen, there is attached* to the holder a sliding channel or regulator

of metal or other material, the lower end of which is curved, and bears upon the inner surface of the pen; there is also a long thin wire or ramrod with a conical head; the stem enters the reservoir through the fine hole; and as the ramrod is attached loosely to the regulator, the conical head, when the pen is not in use, may be partly pushed into the hole by sliding up the regulator; by this means a stopper is formed to prevent the ink from clogging in the smaller part of the reservoir. In the upper part of the reservoir is a hollow plug. The flexible chamber may be protected by encircling it "with thin metal, and continuing it along the "body of the holder;" or "by means of a short screw-cut neck, "which works upon the hollow plug, also screw cut;" or "the "flexible chamber in the form of a tube may be extended the "whole length of the outside tube."

[Printed, 6*d*. Drawing.]

A.D. 1858, September 2.—N° 1996.

WINSTONE, BENJAMIN.—(*Provisional protection only.*)—"An "improvement in the composition of copying and writing inks." "It consists," says the patentee, "in the introduction of glycerine "as an ingredient, in addition to those usually employed in "making ordinary copying and writing inks. Its object is to "preserve longer than usual the copying ink from drying so hard "on the paper as to prevent a transfer, and to keep it in a state "again easily soluble. Either ink will also be prevented from "becoming thick by evaporation before using. Thus composed, "inks may be put up in a semi-solid state, and in that form pre-"served until wanted for use, when, by water or other suitable "liquid, they can be reduced to the proper consistency and "used."

[Printed, 4*d*. No Drawings.]

A.D 1858, September 17.—N° 2103.

GRESHAM, JAMES HAREBOOTH.—"Improvements in copying "letters, invoices, and other writings." The letter, &c. to be copied is written with any suitable copying ink; the copying paper is damped with water, the letter is "placed in juxtaposition "to it," and "oiled sheets are employed for preventing the ink "from spreading." The copying sheets being prepared, a hand roller is pressed once or twice over them, and the letter will be found perfectly copied. The roller is made as follows:—the body,

either solid or hollow, may be of wood, metal, or other suitable material; it is carried loosely upon a central rod or spindle, which works freely in two metal washers, secured to the ends of the body. Two handles are screwed, one to each end of the spindle. Or the body and spindle may be fastened together, or made in one piece, and the handles left to turn loosely round the ends of the spindle. The copying ink preferred by the patentee "is com-" posed of malt liquor, logwood, sugar, gall, sulphate of iron, " gum, cloves, and water." He also makes cases and stands fitted with his roller, and all the requisites for writing and copying.

[Printed, 6*d*. Drawing.]

A.D. 1858, October 6.—N° 2222.

RIDSDALE, JAMES.—"An improved reservoir or fountain pen." The reservoir is an elastic tube of any suitable material, hermetically sealed at the upper end, but having the lower end taper with a flat orifice or mouth. The pen fits into a metal holder, and the reservoir is secured therein by clips formed out of a curved metal piece, which is soldered or otherwise fixed inside the holder. A tube of thin metal, hard india-rubber, or other suitable material, closed at the upper end, or if necessary with a small hole in it, fits tightly over the upper part of the holder, thereby forming a handle. A portion of the holder is cut away to enable that part of the reservoir which is inside to be pressed upon by the forefinger. A small wire pin, having the outer end bent, is introduced into the orifice for the purpose of opening it, if it become clogged, and of ensuring a proper flow of the ink from the reservoir. This arrangement is for an office pen. A pocket pen has the opening for the forefinger cut out in the tube which forms part of the handle. Another tube with an air-hole in it is made to fit either end, thus serving to lengthen the handle or as a cover for the pen. To ensure the closing of the orifice when the pen is not in use, a spring is employed, which should project sufficiently for the cover to press it closely upon the orifice.

[Printed, 8*d*. Drawing.]

A.D. 1858, October 13.—N° 2278. (* *)

PARKINS, JOSEPH.—(*Provisional protection only.*)—"Improve-" *ments in securing* envelopes and in fastenings to be used " *therein.*"

The invention consists in "forming envelopes so that the ends "of the side lappets may fold over each other upon the top of the "lower lappet, and in cutting and piercing a hole through each of "the side and lower lappets, so that when folded together the "holes may lay over and correspond with each other; also in "cutting or piercing holes in the upper or seal lappet to enable "it to receive the legs or pins" of a fastening made of suitable metal "cut or stamped into a circular, oval, lozenge, or shield-"like form leaving short legs or pins projecting therefrom." "These legs or pins are turned up at right angles, passed through "the paper, and bent down so as to secure the fastening to the "seal lappet of the envelope." "Another leg or pin, longer than "those just described, is made to project from the lower part of "the said plate or shield fastening, and is turned down at the "end and pinched into the form of a spring hook, when it is "passed through a hole in the seal lappet and is ready for use." In using the envelope, the gum of the seal lappet is wetted, and the "hook or hooks of the fastening" are passed through the eyelet holes in the side and lower lappets, "when the spring opens "and prevents the withdrawal of the hook or hooks without "partially destroying the envelope or breaking the fastening."

[Printed, 4d. No Drawings.]

A.D. 1858, October 16.—N° 2316.

DUNN, ARTHUR.—"An improvement in preparing marking "compounds to be used on linen and other fabrics." The patentee claims the invention of making marking ink in a solid form for use in ever-pointed pencil cases or other suitable holders. The base of the compound he prefers to be (but the ingredients and proportions may be varied) 1 part by weight of fine wax, 1 of hard stearine or of spermaceti, 2 of powdered plumbago, and 1 of vermilion. These he puts into a mortar fixed in a water or steam bath, heats them until the wax and stearine are melted, and then grinds them until the mixture is thoroughly combined, "maintaining the heat at such a temperature as will just keep it "in a pasty state." He then allows the mass to cool, rubbing continually with the pestle until it is reduced to a granular or powdered state. He next crushes carefully in another mortar (fixed as above) 3 parts by weight of nitrate of silver, to which he adds 1 part by weight of the base. He heats the mortar and grinds until the nitrate and base form a pasty mass and are thoroughly

incorporated. When this is effected, he allows it to cool down gradually to about 60° to 70° Fahrenheit, grinding the whole time until he reduces it to powder, so that it can be sifted through a moderately fine muslin sieve. The compound may now be made into blocks. Portions, according to the size of the blocks required, are weighed out and heated until they are clammy, when they are placed in moulds (provided with plugs and suitable levers) the internal parts of which have been previously rubbed over with plumbago (the patentee prefers to warm the moulds before using them), the plugs are put in and great pressure is applied. When the blocks are cold, they may be cut into slabs of the required thickness in the usual way.

[Printed, 4*d*. No Drawings.]

A.D. 1858, October 21.—N° 2354.

BALDWIN, JAMES, junior.—" Improvements in files or holders " for papers, letters, bags, and other similar articles." This holder is composed of a metal plate which can be screwed to a shelf or rail; a long needle fixed to the foot of the plate, and a spring attached to the top of the plate and tightened thereto by means of a set screw and collar, or a metal arm hinged to the upper part of the plate and furnished at its lower extremity with a balance weight. The needle may be " shaped like a knife blade " for the thicker portion of its length." The spring may be placed " at the back of the upper end of the arm " or between the back plate and the arm. " The opposite end of the spring may " be forked, or it may be furnished with a padded shield or cap, " or the end of the spring itself may be turned up and form a " protection " for the point of the needle.

[Printed, 6*d*. Drawing.]

A.D. 1858, November 16.—N° 2574.

TAYLOR, SAMUEL.—(*Provisional protection only*.)—" Improve- " ments in fountain pens." The reservoir is a tube which is at all times closed at the upper end. The lower end of the tube, when supplied with ink and in use, is closed by the introduction of a flexible elastic plug. The pen is inserted between the plug and the interior of the tube in such manner that by the usual pressure exerted in writing the plug will yield and ink be allowed *to flow to the nibs.*

[Printed, 4d. No Drawings.]

A.D. 1858, December 1.—N° 2743.

VINEY, EBENEZER.—"An improvement in the construction of "portmanteaus, desks, dressing cases, despatch boxes, and other "like articles." The article is made with a cover "flexible "throughout or flexible in part only." One end or side of the cover is connected to a drawer or sliding compartment, while the other is free to slide along the top of the article under rims or flanges. A partition separates the upper from the lower part of the article "and forms a bottom to the upper part." The connexion between the cover and the sliding compartment is such that when the latter is drawn out the cover is drawn back from the upper part, "and consequently both compartments will be open," and the drawing the cover forward draws in the sliding compartment. Despatch boxes are furnished with two flaps, one at the back end or side of the box, the other at the front of the drawer; these "must be folded down before the drawer is pushed inwards "to close the two compartments."

[Printed, 6*d*. Drawing.]

A.D. 1858, December 11.—N° 2848.

WILEY, WILLIAM EDWARD.—Improvements in ever-pointed pencil cases. In this invention the tube which holds the upper end of the lead is attached to the propeller. The holder may be made in two ways:—either the lower part of it is tubular and split, while the upper part is a solid stem passing up through the propeller and provided with a head to prevent it from slipping; or it may be made "in two or more parts which are carried by spring "stems," so that, when it has been moved through the nozzle, its parts separate and leave hold of the last portion of the lead. In the former construction, "a short forcing wire is used, which "is arranged so as to be moved forward when the end of the "holder comes up through the nozzle." By either of these arrangements the propeller alone rotates; the lead is pushed straight down. The propeller and holder are placed in a split tube attached to the top of the outside case, between which and the split tube is a metal tube having a screw formed on its interior. The nozzle is fixed to the outside case, which may be of wood, ivory, or other suitable material. A coil of wire may be employed to form the screw by making the outer case of two or more pieces of metal, the interior surface of each being tinned. The coil is

soldered to the interior and the edges of the pieces to each other, except at the lower end of the nozzle, when it is desired that such end shall be at liberty to spring open. The outer case may be coated with wood, varnished paper, or the like. In small pencil cases it is convenient to increase the length by so arranging the split tube that it may be partially drawn out of the case at the top.

[Printed, 8*d*. Drawing.]

1859.

A.D. 1859, January 8.—N° 68.

COBBOLD, EDWARD.—Improvements in instruments for writing; in the preparation of certain substances for conversion into instruments for writing; and in the application of certain products arising from the preparation aforesaid. The patentee makes his pens principally from strips of reed or cane; these he divests at intervals of the soft spongy material which lines their interior; the pens are made from the hard shell, while the soft part left forms a stop to the split. He further improves his pens by means of certain springs and reservoirs applied to them either separately or in conjunction. Several modifications of both pens and holders are described. A strip with a pen formed at one end may be attached by an india-rubber band and ring to a holder either cylindrical or grooved. The pen and holder may be manufactured out of the same piece of reed. The holder may be an ordinary quill from which a short piece is cut, reversed, and inserted within the barrel; these cuts are made, two longitudinal and one transverse, whereby "a tongue piece of the barrel is partially "liberated;" this tongue is forced inside and forms a stop for the inserted piece, between which and the barrel the pen (a single length only) is held. The quill may have several holes punched in the back of the barrel, "so as to form a kind of grated opening "with one or more cross bars or parts for the support of the pen "when threaded through the holes," or only one hole of an elongated form and a band of india-rubber placed round the barrel about the middle of the hole. About an inch may be cut *off from* the end of the quill, and the small end of the detached *portion inserted into the* barrel and made fast by a suitable

pledget. The springs, &c. with their appliances are applicable to all sorts of pens; they slide nearer to or further from the point, or are made to be permanently attached to pen or holder; steel pens, to which these springs are to be applied, should be manufactured "weak in the sides." The spongy material, being a ready absorbent of fluid, may be pointed as a pencil and "used " as a stump or instrument for marking."

[Printed, 8*d*. Drawing.]

A.D. 1859, January 27.—N° 247.

MEACHAM, JAMES.—(*Provisional protection only.*)—"Improve- " ments in pens and penholders." The object of this invention is "to give to a writer two pens on one holder; and the invention " consists, firstly, of stamping out or otherwise forming from " steel or other suitable metal or material, and of cutting quills " in the form and shape of a double pen, the nibs or points and " slits being made at both ends, and of one or varying size." In the two sides of this pen, at about the centre, "two holes are " made to admit the points of the holder, which forms the second " part of this invention. This holder consists of a barrel termi- " nating in two points, which take into the holes in the pen; on " this barrel a ring or band of metal or other suitable material " moves freely. An ordinary stick being put into the barrel, the " ring or band is drawn upwards, and the points of the barrel " are inserted in the holes of the pen. The band or ring is then " moved downwards and grasps the upper pen, while the lower " one is ready for use."

[Printed, 4*d*. No Drawings.]

A.D. 1859, January 29.—N° 271.

MEACHAM, JAMES.—(*Provisional protection only.*)—An apparatus for clasping books, purses, and similar articles, and for retaining and securing papers, letters, and other memoranda. " The sides are rigid, but the clasp being elastic allows of the " insertion of papers, documents, &c." An elastic band for closing books and simultaneously retaining papers is thus described by the patentee:—"The band has a rigid loop for " receiving the back of the book, and two hooks or other con- " trivances which are fastened to the covers; the band is then " secured by a stud and slot, or other similar means, and forms a

" spring clasp, so that the book is fastened while it will admit of " being opened to receive papers, and papers may be attached to " either side of the book under the elastic band." Another part of the invention consists of an elastic band with hooks or other similar fastenings.

[Printed, *4d.* No Drawings.]

A.D. 1859, January 31.—N° 272.

SMITH, THOMAS PLUNKETT.—" An apparatus for guiding or " directing the pen or pencil in writing or drawing," which is to be placed on the forefinger between the second and third joints, and which shall serve to keep the pen in a proper position. It is composed of a ring, rest or hook, and a tail piece, the rest being formed with or attached to one side of the ring, the tail piece to the other side. The apparatus may be made of gold, silver, or other metal or suitable material, or of a combination of materials; or the ring may be wholly elastic and the rest " of a solid and " rigid substance or to act as a spring, not only supporting the " pen shaft, but closing around it and securing it in position." The tail piece serves " to fend off and in part as a rest for the " second finger."

[Printed, *6d.* Drawing.]

A.D. 1859, February 4.—N° 319. (* *)

TROTMAN, SIMON LEE.—(*Provisional protection only.*)—" Im- " provements for the more effectually securing or fastening enve- " lopes or other like receptacles, and the more securely affixing " postage stamps and other adhesive labels."

The invention consists, 1, in forming envelopes with a tuck or tongue gummed on both sides and a pocket in the back of the envelope, into which the tongue is inserted; 2, in covering so much of the surface of the paper as covers the gum with a coating of waterproof material; 3, in an instrument to facilitate the adhesion of postage stamps, &c. The stamps, &c. are introduced face downwards in a box provided with a piston having a hollow piston rod, which works through a stalk or handle attached to the back of the depôt which contains the labels. On one side of the little box a sponge is placed for the purpose of damping the surface to which the label is to be affixed, and on the other side a *small roller is mounted* for the purpose of pressing down the

stamp, &c. when applied. "When it is desired to apply a stamp "all that is required is to moisten the corner of the letter with "the sponge and then apply the open end of the box containing "the stamps to the moistened surface, press the elastic air "chamber on the top of the stalk with the hand, when the fresh "stamp will be forced against the letters by the action of the air, "and upon the air chamber being a little further compressed, the "hand will act against the top of the piston rod, by which addi- "tional pressure may be applied."

[Printed, 4*d*. No Drawings.]

A.D. 1859, February 10.—N° 375.

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—"Im- "provements in writing materials and the manufacture thereof." The patentee claims improvements in five subjects: pneumatic inkstands, pencil cases, steel and other pens, pen cleaners, and balance penholders. He employs "levers for pressing elastic "balls or cones," curved, piercod, or other form of end or end pieces for the dipping cups, and two or more elastic diaphragms (where such are used) for each inkstand. The pencil cases are made with an endless screw or slotted cylinder movement to propel and withdraw the leads; the point slides backwards and forwards by means of a ring or stud, or springs back by using an elastic cord and a slot, or a similar contrivance. The point is made "of aluminium or other metal, out of one piece unsoldered." He makes "a very cheap" pencil case (to take back the lead) with a tube to fix the lead in and an elastic point; the lead is drawn back "by means of a close fitting slide on the exterior "of the case." Steel and other pens are made with one or more slits at the top; reservoir pens "by attaching a thread or threads "of gutta percha, wire, or other suitable material in such a "manner as to retain an extra quantity of ink." Two or more bars or wires are placed lengthwise, or lengthwise and crosswise; and one or more wires or a suitably formed piece or pieces of metal "on the under or the under and the outer part of the pen "to fix or slide on to the nib." In cutting the blank the sides are serrated and bent inwards, or inwards and outwards; or the sides are made with a flange or flanges. Galvanic or electric pens are made "by using a combination of zinc and copper to "form a reservoir." Brushes or pen cleaners are made of wire,

or of wire and bristles. Penholders of aluminium or other metal are made of tubing shaped to hold a pen, and with one or more projections pressed out near the end; others are tapered "very "small at top, and large at bottom, of circular form, and of all "the known metals." At the lower extremity is inserted a wooden or other plug with a suitable orifice cut in it to receive the pen. Some penholders are made with joints like a telescope.

[Printed, 4*d*. No Drawings.]

A.D. 1859, February 11.—N° 387.

HYDE, GEORGE.—(*Provisional protection only.*)—A pen for writing in duplicate. The pen "is constructed of extreme hard-"ness and rigidity," of at least twice the thickness of material of an ordinary metallic pen, and without any elasticity at the shoulder, and the nib such that "it will only separate or act just sufficiently "to conduct the ink, and allow of the writing being produced "on the paper. By applying such a pen with ordinary ink or "writing fluid on paper under which is placed a leaf of semi-"carbonic or other suitable transferring medium, and beneath "that a leaf of paper for the reception of a duplicate or copy (or "several such leaves of media and paper alternately), an exact, "legible, and durable copy or copies of the original writing will "be produced on the paper or papers beneath."

[Printed, 4*d*. No Drawings.]

A.D. 1859, February 16.—N° 436.

O'DOHERTY, WILLIAM ARCHDALL.—(*A communication from Daniel Dunham Sweet.*)—(*Provisional protection only.*)—"An "improvement in blacklead pencils and pencil cases." The improvement consists in introducing a narrow strip of india-rubber or a preparation of india-rubber at one end of a pencil "in such "manner as to be enclosed therein in like manner to the lead at "the other parts of the pencil," so that when part of the wood is cut away and the india-rubber left projecting, a pencil mark eraser will be at hand. The patentee also applies "a portion of "india-rubber to one end of a pencil case, and such piece of "india-rubber may be arranged to slide into such end of the case, "or be otherwise covered when not in use."

[Printed, 4*d*. No Drawings.]

A.D. 1859, March 18.—N° 689.

HINKS, JOHN, and WELLS, GEORGE.—(*Provisional protection only.*)—"Improved penholder." The patentees thus describe their invention:—"Our new or improved penholder is made of "sheet steel, and consists essentially of two hollow cylinders or "tubes fitting one upon the other, the inner tube being elastic, "and the outer tube inelastic. The outer tube consists of a rect- "angular piece of sheet steel bent into a tube-like form. In "order to give the requisite elasticity to the inner tube, we make "it from a blank or piece of sheet steel, which is slit down its "middle longitudinally nearly its whole length, so that when bent "into a cylindrical form it constitutes a tube, having slits at "opposite sides, which nearly divide it into two semi-cylinders. The elastic tube is fixed on the ordinary stick, and the inelastic "tube is fixed on the elastic one. The pen is held by being in- "serted between the two tubes. We prefer to turn in the exposed "end of the inner or elastic tube so as nearly to close the said "tube. To effect this, we cut the edge of the blank from which "it is made of such a shape that when the said edge is turned in "the said inner or elastic tube is nearly closed by a hemispherical "termination, having a cruciform slit or piercing."

[Printed, 4*d*. No Drawings.]

A.D. 1859, March 22.—N° 720.

TAGLIACOZZO, PACIFICO.—(*Provisional protection only.*)—"An improvement on metallic pens." The patentee intends to manufacture pens "with the metal called aluminium, and with "the alloys of this metal, and copper, gold, silver, platinum, and "any other metallic substance."

[Printed, 4*d*. No Drawings.]

A.D. 1859, March 24.—N° 748.

WILEY, WILLIAM EDWARD.—Improvements in the manufacture of boxes for holding pens, pencils, and other articles. The boxes are of a tubular figure, wholly or mainly of metal. In manufacturing some of them two cruciform or wing-shaped blanks are formed into tubes, one for the body, the other for the lid. A piece of smaller tubing for the lid to slide on is fixed by soldering or other means to the body, and into the top of the lid and bottom are inserted "circular discs of paper or other suffi-

" ciently soft and rigid material." The boxes are finished by being covered with plaid or other paper. Others are made by soldering a series of tubes round a central rod or tube; the lower end is closed by a disc, the upper end by a cover turning freely on the central tube. In one of the compartments a small bolt works pressed to its bearing by a spring. The neck of the knob of the bolt passes through a slot, and the cover is fixed by the bolt passing through a hole therein. The contents of each compartment are removed by bringing the hole opposite to the open end thereof. Other boxes are made by bending a plate of corrugated metal into a cylinder, and fixing a tube on each side of it. The inner tube is closed at top and bottom by discs, and the ends of the compartments by covers turning on an axis. These covers have each a hole in them (as in the last-described boxes) and are fixed by a sliding bolt entering the same. The contents of the outer compartments are removed through the hole in the lower cover. Other boxes are made of V-shaped bars disposed radially upon a central tube; the cover is fixed by the bent end of a pin or rod which enters a hole in the same. The bolts and pins may be substituted by a plate placed upon the cover and capable of turning thereon. In the plate is a hole which must be brought opposite to and coincide with the one in the cover, before the contents of any compartment can be removed.

[Printed, 8*d*. Drawing.]

A.D. 1859, April 1.—N° 820.

DAVIS, JOHN JAMES.—(*Provisional protection only.*)—" An " improved pad applicable for inking, damping, & other like " purpose by hand." This invention relates to the application of a pad mounted on an axis, " for the inking or coloring of stamping " surfaces, and for damping or gumming stamps, envelopes, and " other like purposes by hand." The pad is mounted in a suitable stand on an axis, " furnished with a thumb knob or other con- " trivance, for turning it round readily; it also has a stop plate " with notches in it, into which a spring takes and holds it in " position. These notches are in proportion to the number of " faces the pad has." For the inking and damping surfaces chambers to contain the ink or other fluid are fitted into the body of the pad, and covered with cloth or other material through which a little of the fluid penetrates.

[Printed, 4d. No Drawings.]

A.D. 1859, April 2.—N° 827.

DESBOROUGH, SPENDLOVE.—(*Provisional protection only.*)—"Improvements in making up needles, steel pens, and other "small articles for sale." Grooves are impressed on part of the surface of "a piece of paper, tin or other metal foil, stiffened fabric, "or other suitable material," by means of dies or tools; and the parts not impressed are afterwards folded over and secured over the grooved portion, "leaving one end of such series of grooves "open" for the introduction of the articles to be enclosed, "that end being afterwards covered by a loose flap folding over." Similar cases or packets may be made "by covering one or both "sides of a piece of grooved or corrugated foil or other suitable "material," leaving one end open as before and closing it by a "folding flap. In order to retain the contents in the cases there is placed in them, when being made up, "a thin strip of magnet-"ized iron or steel," which will attract the pens, needles, &c., "and prevent them falling out of the grooves." This latter part of the invention "is applicable to cases of every description" for holding "small articles of iron or steel."

[Printed, 4d. No Drawings.]

A.D. 1859, April 6.—N° 861.

BALLANDE, JEAN AUGUSTE HILARION. — (*Letters Patent void for want of Final Specification.*)—"An improvement in the "preparation of writing paper, and ink to be used thereon." Oxides or metallic salts are introduced into the paper, either during or after its manufacture; the proportions vary according to the intensity of effect to be produced. The ink produces on the prepared paper dark grey characters which in a few days become dark green. It is composed of gum water, about 1,000 parts, prussiate of soda or potass about 25 parts, and hyposulphite of soda about 25 parts. Or "I use," says the patentee, "in the com-"position of the ink soluble alkaline iodides and iodates, very "diluted sulphurous acids, sulphurs, hydrosulphates, sulphites, "carbonates of soda, of potass, and of ammonia, alone or mixed, "and sometimes sulphocyanides of potassium, pure or diluted "with water slightly acidulated, or mixed with the prussiate of "soda or potass, or the hyposulphite of soda."

[Printed, 4d. No Drawings.]

A.D. 1859, April 13.—N° 929.

JOHNSON, ALFRED RICHARD.—" An instrument for damping, " severing, and affixing postage and other like stamps." A strip of postage stamps is wound upon a drum and carried by one motion of the instrument the distance of an entire stamp along a trough between two vertical feed wheels, and through a slot in an upright plate. Under the plate is a platform, and over it a piston with a rod and a helical spring to keep the piston raised. To a cross bar extending from the top of the piston rod, the upper end of a vertical rod is connected, while the lower end, which is hooked, takes hold of one of a series of pins projecting laterally from a disc which is mounted on the same axis as the upper feed wheel. Over the platform, but not touching it, is fixed a damping apparatus, namely, a plate carrying a sponge or other suitable substance kept moist.

[Printed, 6*d*. Drawing.]

A.D. 1859, April 21.—N° 1001.

DAWSON, THOMAS, and AVERY, JOHN.—(*Provisional protection only.*)—" Improvements in pencil cases, watch seals and keys, " toothpicks, and other like articles of jewellery, lockets, penknife " handles, porte-monnaies, and other like articles." The improvements consist in constructing these articles, so as to allow space in them for a number of postage or receipt stamps, "to be wound in " and out by a mechanical contrivance that shall have a propelling " power regulated by the number of stamps to be wound in or out." The invention is described with respect to a pencil case; one part of the case is made of sufficient length and volume to hold a number of stamps, " which are inserted through a slit made in " the interior of the drum or cylinder in which they are wound " and act." The stamps are wound in and out by " a longitudi- " nal steel or other spring, fitted to a centre pin fastened to one " end of the pencil case, and through a hole at the opposite end " of the drum, which is detachable, and through which a pin " revolves to work the stamps in and out." This spring is not rivetted to the centre pin, " but is slotted at the ends and made " to slide on two small pins, so that the pressure of the stamps " reduces the curve towards a straight line;" or it may be so arranged " as to work from a straight line to a curve." A tape *line may be used* instead of stamps, or may be combined with

them. In lockets, porte-monnaies, and such like articles, "this "" invention may be applied to the hinges or clasps, or other " suitable part thereof."

[Printed, 4*d*. No Drawings.]

A.D. 1859, May 3.—N° 1104.

FRANKLIN, ABRAHAM GABAY.—(*A communication from Gottliel Wilhelm Sussner.*)—(*Provisional protection only.*)—"Improve- " ments in the manufacture of crayons." "The required primary " color is mixed with clay (bolus), well ground together in water, " then dried. When the color is dry, a solution of tragacanth gum " is added to it, and the whole kneaded to a paste, of which the " pencils are formed, by means of a cylinder or press. The pen- " cils are then again well dried or hardened, and dipped in a hot " solution of stearine, spermaceti, and cocoa-nut oil; after about " an hour's time, the pencils are taken out and washed in oil of " turpentine; thus cleaned and properly cooled, they are put in " wood and framed up."

[Printed, 4*d*. No Drawings.]

A.D. 1859, May 26.—N° 1300. (* *)

PATRICK, HUGH WILLIAM.—"A new substance or material to " be used in lieu of ivory and other like substances."

Among the applications of the new substance are "pen and " pencil holders or cases."

The new substance is compounded of amber, Canada balsam, the Australian gum, cowdry, potato, flour, or fecula. "With " these or any of them" is combined "meershaum, paper pulp, " calcined bones, fluorate of silicia, sulphate of mercury, or other " metals, chlorides of zinc or other metals, alkaline preparations, " asbestos, fluxed or fritted colours, or finely powdered pumice " stone, or sulphur, india-rubber, or similar gum." The com- bination may be effected in various ways, such as by reducing the gums to solution, or by the application of heat. The substances to be incorporated or combined with the gums should be previously reduced to suitable fineness for mixing, so as to obtain a plastic mass, which may be rolled into sheets or other suitable forms for moulding. When shaped or moulded, the new material is hardened by the application of heat, and will bear a high polish.

It may also be dyed, stained, or otherwise colored, either when completed or in the course of manufacture.

[Printed, 4*d*. No Drawings.]

A.D. 1859, June 30.—N° 1561. (* *)

TOWER, LEVI LINCOLN.—(*A communication from John A. Lynch.*)—A "machine for damping and wetting paper, etc." The invention consists in a new "machine to be used in copying "letters, &c., into copying books, in lieu of the usual process of "first wetting the sheet by a brush or otherwise, and then "absorbing the superfluous water with a sheet of blotting paper." The machine is composed of "a hollow perforated cylinder "covered with cloth and containing water, and a second cylinder "covered with blotting paper, the two cylinders being connected "by a handle, and revolving in a frame." "The sheet upon "which the impression is to be made will be dampened by the "water cylinder, and the superfluous moisture absorbed by the "second cylinder at one operation, by passing the machine once "over the sheet."

[Printed, 6*d*. Drawing.]

A.D. 1859, July 12.—N° 1653. (* *)

PROAL, CAMILLE JOSEPH.—(*A communication from Jules Bernard.*)—"The application of photographic impressions or pictures "upon fabrics or tissues for rendering such fabrics or tissues "applicable to various useful purposes."

This invention consists "in applying to oilcloth, glazed cotton, "leather, and other fabrics or tissues, one or more photographic "impressions, and employing the fabrics thus prepared for "making up pads for writing blotters, chimney fronts, table "covers of any form, lamp and other stands, portfolios, purses "or money holders, tea trays, covers for books and journals, and "other similar articles, and more especially such articles as boxes, "and objects of cardboard. The fabrics having received photo-"graphic impressions may be ornamented with gilt thread, or gilt "decorations of any kind, and enriched by designs of various "colours appropriate to the photographic subjects." "A varnish "may at option be applied over the photographic impressions to "*preserve* their duration and brilliancy."

[Printed, 4d. No Drawings.]

A.D. 1859, July 26.—N° 1738.

GILLOTT, JOSEPH, and MORRISON, JOHN.—"Machinery "for the manufacture of the handles of penholders, which "machinery or a part or parts thereof may also be employed for "manufacturing other cylindrical articles." The machine by which the wood is cut into lengths of a cylindrical figure is constructed and used as follows:—A steel cutter of suitable form is screwed to a rotating lathe shaft. The wood placed on a platform is carried forward by a pair of rollers and passes underneath the cutter; it is pressed against the edge of the platform on one side by a roller on a lever at the other side. Motion is given to the shaft in the usual way, and to the rollers by a band passing over a pulley fixed on a shaft which transmits its motion by means of toothed wheels. The platform and rollers are adjusted to the lathe shaft by screws at each end of the machine. "Instead of "one rotating cutter operating upon one side of the wood at a "time two such cutters may be employed, the second cutter "being situated underneath the first." The cylinders are smoothed or polished, and their surfaces are perfected in another machine. A polisher, "a very obtuse cone of wood or other hard "substance, over which sandpaper or other polishing material is "stretched," is mounted on a lathe head. The cylinders are passed through a horizontal guide lying against the face of the polisher. The side of the guide next the polisher is partially cut away so as to expose the cylinder to its action; and the cylinder is made to pass through the guide with a rotatory motion by means of a coil band passed round it. The band is driven by a pulley on an axis. The cylinders are supplied to the guide by hand, the one entering being pressed close up to the one being operated upon, so that the band may pass from one to the other as though they were but one continuous cylinder. The feeding apparatus is adjusted by a screw, so as to bring either of the feeding holes into use to suit cylinders of different diameters. A rotating brush, to clear away the dust, &c., is driven by a band from the same axis as the coil band. The cylinders are varnished in a third machine; they are passed by hand or by rolls through a cylindrical metal box, situated horizontally and supplied with spirit varnish from a reservoir, the supply being regulated by a stopcock. A small winch at the top of the reservoir is connected with a spatula or stirrer inside, so that the contents may be kept

properly mixed. There are two reservoirs exactly alike, so that they can be exchanged as the varnish passes from one to the other. The cylinders, after passing through the box, fall on to an upper and afterwards on to a lower endless web, and thence into a receptacle; during the transit they are sufficiently dried. The metal box is composed of, 1, a guide containing a perforated cork; 2, a chamber filled with sponge having a perforated diaphragm fixed at its middle; 3, a second chamber filled with sponge, to which varnish is supplied by means of an annular passage provided with radial channels; 4, a third chamber filled with sponge, which is compressed by a spring consisting of a series of elastic arms (the force of the spring is regulated by screwing this chamber more or less on the preceding one); and 5, a collar having an inclined or screw-like face, against which lies a leather or other flexible band, which coils round the cylinder and wipes off the superfluous varnish; the superfluity is received by a funnel and conducted to the reservoir. The ends of the band are fastened to weighted levers, so that the pressure on the cylinder may be regulated.

[Printed, 10*d*. Drawings.]

A.D. 1859, July 27.—N° 1744. (* *)

SCOFFERN, JOHN.—"Improvements in waterproofing, cementing, and stiffening fabrics and fibrous materials, and also in dyeing fabrics and fibrous materials." The solution used, or copperized ammonia," as the patentee terms it, has the property of dissolving woody fibre, paper, cloth, &c. A "solution of silk in copperized ammonia has a lustrous black color. It may be used as an ink, or a varnish for cloth, paper, leather, &c."

[Printed, 4*d*. No Drawings.]

A.D. 1859, July 28.—N° 1755.

JACKSON, JOHN.—"Improvement in metal pens," which consists "in making the pen with a barrel of considerable length and of one and the same piece as the pen, so that no other holder is required in writing with such pens."

[Printed, 6*d*. Drawing.]

A.D. 1859, August 8.—N° 1831.

COHEN, BARNET SOLOMON.—(*Provisional protection only.*)—"*Improvements in* ever-pointed pencils." This invention con-

sists "in forming the aperture at the end of the nozzle of an ever-
"pointed pencil of a pentagonal, hexagonal, or other polygonal
"form, having a greater number of sides." In manufacturing leads for such pencil cases the patentee makes them of a corresponding sectional form.

[Printed, 4d. No Drawings.]

A.D. 1859, September 1.—N° 1992.

BRINE, JAMES.—(*Provisional protection only.*)—Improvements in arranging manifold letter books. The patentee arranges leaves of copying and common writing paper alternately, and binds them together. "Each prepared leaf and its fellow plain one have the
"same index number or initial letter." He perforates the side of the plain leaf next the binding, so that when it has received the writing it can be easily torn out. A sheet of the ordinary black or carbonized paper is placed between the copying and the plain leaf, and the matter is written on the copying leaf.

[Printed, 4d. No Drawings.]

A.D. 1859, September 1.—N° 1994.

TAYLOR, JOHN GEORGE.—(*Provisional protection refused.*)—
"Improvements in writing materials, and in the manufacture
"thereof." The first improvement is stated to be "in shaping
"and cutting conical penholders in wood and other materials." This is effected by means of a spring circular saw and a graduated cutter, into which can be inserted suitable moveable slides. The second, "in making quill and other pens magnetic" by twisting a piece of twisted zinc and copper wire several times round the face of the pen nib. The third, "in the manufacture of pneumatic
"inkstands, in the application of plungers of divers forms in
"connection with fixed, sliding, or rotating covers of dipping
"cups; also in the employment of double and single front levers
"for depressing dipping cups, and in the application of dipping
"cups, the tubes of which are globe-shaped, and the boles at the
"extremity of the said globe-shaped tubes are very small.
"In all these forms the pressure is upon two or more elastic
"diaphragms."

[Printed, 4d. No Drawings.]

A.D. 1859, September 12.—N° 2071.

GUTCH, THOMAS GREGORY.—(*Provisional protection only.*)—Improvement in letter and order books. The patentee uses "a "sheet of oiled paper folioed and ruled with feint lines, and "column lines for numbers, &c." He then places "a plain sheet "of paper folioed and ruled, and also perforated for the purpose "of easy removal." Between these two sheets is "a moveable "piece of two-sided carbonic paper, and for the purpose of writing "either a style or pencil may be used."

[Printed, 4*d.* No Drawings.]

A.D. 1859, September 12.—N° 2080.

MASON, JOSIAH.—"An improvement in boxes or cases and "cards to contain or hold pens." Each box or case is made with one or more recesses in the cover suitable for receiving one or more specimen pens. A flexible or other fastener is provided to retain each pen in its recess. The box may be of pasteboard or other substance and of any shape. The recess may be so contrived that the specimen pen shall lie flush with the cover or below the level thereof. Sometimes the recesses "are lined with or formed "of thin metal stamped or formed suitably to enter the recess." Cards for holding pens are made in a similar manner; that is, with recesses in the cardboard either with or without lining, and each recess having an elastic or other holder to retain the pen.

[Printed, 6*d.* Drawing.]

A.D. 1859, September 24.—N° 2166. (* *)

GEDGE, JOHN.—(*A communication from Denis Nefflier and Pierre Blandin.*)—"An improved stamp-holder and cutter."

"This stamp-holder, which is intended to contain and cut "postage or other stamps, is composed of an outward casing or "box of any convenient shape" divided into compartments (two or four) for holding the stamps. "A longitudinal groove cut in "each side of the box allows a stamp piece to slide and so bring "up the number of stamps cut." "A knife for cutting right and "left and nippers for drawing up the stamps are fitted on a metal "apparatus sliding within a cylinder; a small roller is fixed "within the cylinder on which is wound the sheet of stamps; or, "instead of winding the stamps on the roller by hand, they may

" be fitted thereon by the aid of a thin metal cylinder cleft or " slotted in its entire length, and through the lips of this cleft " the edge of the sheet of stamps may be passed on to the roller."

[Printed, 10*d*. Drawing.]

A.D. 1859, October 1.—N° 2227.

BROWN, CHARLES.—(*Provisional protection only.*)—" Improve- " ments in inkstands and date indicator." The inkstand contains sufficient room for ink bottles, pens, paper, and other requisites, and may be made of any material and shape. The inside is suitably partitioned, and so adapted that the ink bottles are in front. " It is also provided with a lid fixed on one or more " hinges at the back, which contains the indicator." The indicator, which is visible when the lid is open in an upright position, shows the day, date, month, and year. " This is done by means " of a fixed plate or face properly marked, and several plates of " circular form, also properly marked, and made to revolve. " These plates or circles may be made with or without cogs or " notches." The patentee does not confine himself to make them of an entire circle. They may be of other shape, and " indicate " the whole or only a portion of a year without resetting, except " when an indicating finger is used."

[Printed, 4*d*. No Drawings.]

A.D. 1859, October 4.—N° 2244.

ENGLISH, SAMUEL ROBERT.—" A machine or apparatus for " taking copies of writing." A cylinder, or a piece of iron or other metal, bent round to about two-thirds of a circle and with the edges turned outwards, is fastened to a base or stand of wood, papier maché, metal, &c. On one side, where the cylinder and stand are united, is fixed " a piece of leather or other suitable " material, the length of the cylinder and wide enough to wrap " round the exposed surface " thereof, the loose end being secured to a moveable spindle. On the front end of the spindle (the handle of which is fixed or not) is formed a tapered square which fits a square hole in a ratchet wheel; the other end is passed through an eye or open bearing in an end piece. The ratchet is set free or stopped by means of a pawl. To copy a letter, papers properly prepared are placed upon the cylinder, the leather is brought over them, the spindle, which had been previously

drawn out, is replaced and turned so as to strain the leather tightly over the papers and cylinder. The stand may contain a drawer; it may also have attached to it a leather or other case with a thick welt on the edges—this, when open, will serve as a writing desk, and when closed as a cover to the whole apparatus—a lock and straps may be added, the latter when fastened forming a handle. The leather may have at the farther end a piece of hard wood which carries the staple of the lock and a metal clip for pressing down and holding a writing pad. The cylinder may be fitted with ends, drawers, &c. Various other modifications and additions may be made without departing from the principle of the invention.

[Printed, 10*d*. Drawing.]

A.D. 1859, October 28.—N° 2464.

MITCHELL, AURELIUS BRUCE.—"Improved penholder." On each side of a blank cut from sheet steel or other elastic metal or alloy a slit is made curving upwards, so that, when the blank is bent, the two parts are connected by about half the circumference of the holder. The middle of the lower part of the blank is pressed into a concave form, and the ears are bent back forming two flaps. The pen rests on the inner side of the concave and is pressed at its sides or edges only by the flaps; consequently, as the curve of the concave is made of greater radius than that of ordinary pens, pens of a smaller size are held equally well.

[Printed, 6*d*. Drawing.]

A.D. 1859, November 19.—N° 2623.

GODCHAUX, AUGUSTE.—"Improvements in the mode of "printing forms or models or copies of penmanship and designs "on paper and other fabrics." This invention is carried out by aid of a machine of the following description:—Two cylinders, "the external circumference of which is engraved with the models "or copies of writing and with lines or rulings, and whatever is "necessary for the study of penmanship," are mounted "in "bearings moving vertically;" underneath them are fixed two receivers (containing ink or colour), and in these dip two rollers "which carry the ink or colour into the engraved parts of the "*cylinders*;" two scrapers "serve to clear off the excess from the "*surface*." *Above* are two cylinders, and above these two others,

and round each vertical pair passes a woollen cloth forming an endless band. All the cylinders are so mounted that by means of screws or weights pressure can be increased or diminished and the endless bands can be tightened or loosened; details of the mounting are given in the Specification. The paper to be printed descends from a roller on which it is wound between one engraved cylinder and the one immediately above it; here it is printed on one side; it then passes over a roller and between the other engraved cylinder and the one above it, "where it receives an "impression on the opposite side;" it is then "taken out "completely printed at the lower part of the machine."

[Printed, 10*d*. Drawing.]

A.D. 1859, November 24.—N° 2658.

LANGFORD, JOHN.—(*Provisional protection only.*)—"Improve- "ments in inkstands, and in combining with inkstands instru- "ments for holding and damping stamps, labels, and other "articles." The first part of the invention consists "in applying "to the dipping cup of an inkstand a diaphragm of vulcanized "india-rubber, the said diaphragm being stretched over the dip- "ping cup, and having a small perforation at its middle." Perforated diaphragms are also applied to the holes in inkstands in which pens are held when not in use, serving at once as pen-holders and wipers. The second part is effected as follows:—A shelf or support is placed across a vessel of glass or other material. An ordinary ink cup is dropped into a hole at one end of the shelf, and a label damper consisting of a flat sponge and a strip of cloth is formed on the other. The vessel is provided with a cover on which are receptacles for labels, &c. and on the edge of the cover is a holder for a pen; the receptacles too have covers. A camel-hair or other brush, for damping tissue paper for copying or writing, may be attached to the vessel by a cord.

[Printed, 4*d*. No Drawings.]

A.D. 1859, November 26.—N° 2678.

MOSELEY, WALKER.—"Improvements in fountain pens." The following is a description of the mechanism of the improved fountain pen:—Within the lower part of an ink reservoir of soft india-rubber is securely attached a cylindrical piece of hard india-rubber, wood, ivory, or other material, with an opening round its outer edge for the reception of a pen. This piece is perforated in

its centre lengthwise with a round hole, which has a groove cut on each side for a flat piece of hard substance to travel in up and down. This piece is provided at its lower extremity with a conical and tongue-shaped piece, the tongue itself being in close proximity to the nib; or it may be formed at its tip with two side pieces or lips for the purpose of supplying ink to the back of the nib. At the top of the reservoir is a screw, on the head of which is placed a cap to lengthen the holder, and to be slipped over the pen when not in use. To fill the reservoir the screw is turned a few times, whereby the india-rubber becomes twisted and forces the air out, and the travelling piece is drawn down slightly with the finger or thumb nail; then by turning the screw the reverse way, and at the same time dipping the end of the instrument in ink, the india-rubber will resume its tubular shape and draw up a supply. There is an opening or a button in the outer metal case to allow the reservoir to be pressed by the finger for the purpose of moving the cone-shaped piece.

[Printed, *d.* Drawing.]

A.D. 1859, December 7.—N° 2771.

COLLYER, ROBERT HANHAM.—A chemical inkpencil. This invention is the manufacture of a self-inking chemical pencil, that is, an instrument which, without requiring immersion in any fluid, will produce on paper marks as indelible as those obtained by ordinary pen and ink. The patentee sets forth the following eight formulæ which may be adopted for producing effective compositions for carrying out his invention; 1, nitrate of silver, anhydrate potassa, carbon, olive oil; 2, caustic potassa, nitrate of silver, steatite, carbon, olive oil; 3, caustic potassa or soda, nitrate of silver, fuller's earth, steatite, olive oil, carbon; 4, same as 3, but in different proportions; 5, caustic potassa, nitrate of silver, talcose slate, carbon, camphor, olive oil; 6, anhydrate of potassa, iodine, oxide of lead or litharge, vegetable carbon, steatite, pipeclay, camphor dissolved in oil; 7, anhydrate of potassa, iodine, vegetable or mineral carbon, nitrate of silver, steatite, pipeclay, fuller's earth, camphor dissolved in oil; 8, vegetable carbon, steatite, fuller's earth, nitrate of silver, iodine, caustic potassa and oil saponified, oil of tobacco, neat's foot oil. "Peroxide of manganese may be added "to any of the foregoing compositions in a proportion of about "$\frac{1}{10}$th of the whole mass to obtain increased hardness." *Graphite, or plumbago,* lampblack, or other coloring or marking

agent may be combined with the other ingredients to obtain visible marks before chemical action takes place. He does not restrict himself to any proportions of the above, nor to the particular ingredients mentioned; he claims only the invention of the employment of "anhydrous potassa or other anhydrous substance "having such affinity for humidity as to absorb it from the "atmosphere or other source, and thereby become more or less "deliquescent in combination with oxide of silver or other ma-"terial of such character that chemical action will take place "with it and the anhydrous substance on the latter becoming "deliquescent." The solid ingredients should be reduced to a state of the finest powder, each separately; they are to be then intimately combined, incorporated into a mass, and brought to the consistency of a thick paste; this, when nearly dry, is formed into crayons, leads, or other required shape, by forcing it into moulds by means of hydraulic or other pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1859, December 20.—N° 2895.

TURNOR, MICHAEL.—A "method of manufacturing metal "boxes." These boxes "are suited to hold metallic pens, leads, "matches, and other articles." They are made as follows:—A blank is cut from sheet metal of any description of such form that, when the sides and ends are bent at right angles to the other portion, they form the sides and ends of the box. On opposite sides of the blank are left tongues or ears, the ends of which are bent and pass through corresponding slits in the adjoining sides, and which, when clenched in the interior of the box, bind the sides and ends firmly together. The lid slides along grooves cut in the top edges of the sides.

[Printed, 6*d*. Drawing.]

1860.

A.D. 1860, January 7.—N° 52.

GARNETT, JOHN.—"Improvements in writing desks, and in "apparatus connected therewith." The interior of this desk is

fitted up as follows:—thin plates of metal of graduated sizes are placed one above the other, the smaller sizes being uppermost. Each plate is formed on one edge with two ears which fit into slots in one side of the desk, and through these ears vertical pins are passed. The writing paper and envelopes are held together between the plates by the pressure of a spring or elastic band which either passes entirely round the series of plates and papers or is secured at each extremity to the bottom of the desk. On the opposite edge of each plate is a small handle, and also a notch in which the band is placed; and on the surface of each lower plate is a loop through which the band is passed before descending over the notched edge. The remainder of the space inside is provided with the ordinary conveniences for holding requisites for writing. The cover, which forms a writing slope, contains a recess for large paper, and a blotting pad consisting of a number of sheets of blotting paper and a flexible back piece cemented together at their edges; these are held in their place by two swivel buttons.

[Printed, 8*d*. Drawing.]

A.D. 1860, January 9.—N° 57.

BENINGFIELD, GEORGE.—"Improvements in reservoir or "fountain pens." The reservoir is tubular, having a nozzle piece screwed thereto and a sheath in which to fix the pen. In the nozzle is an orifice, so placed that it coincides to a certain extent with the split of the pen and the hole at the end of the split. In the lower part of the nozzle is a diaphragm of perforated metal or of woven material, separating a space near the orifice from the main body of the reservoir. The diaphragm may be directly across, or inclined, or curved, or conical; there must be holes in it such that those nearest the orifice permit the flow of ink, the others air; if it be made directly across there must be a tube open at both ends, terminating at its upper extremity in a "transverse "perforated diaphragm."

In a pocket pen a transverse diaphragm only is used, and in the top of the reservoir is attached an india-rubber sack having a projecting button head, a slight turn of which will cause ink to descend to the pen.

[Printed, 6d. Drawing.]

A.D. 1860, January 27.—N° 211.

JOHNSON, JOHN HENRY.—(*A communication from Howell Evans and Henry Howson.*—"Improvements in inkstands." This invention consists of an inkstand capable of being tilted in opposite directions by means of an adjusting screw or screws; it is composed of a cup-shaped stand and an ink reservoir "of a cir-"cular form, flat or nearly so on the top, and convex on the under "side," and having a dipping cup which projects from the stand. On the under side of the reservoir and in front of the centre of gravity is "an elongated sharp-edged projection" which rests on a similar notch in the inside of the stand. Over the neck of the dipping cup is a bridge (secured to the edge of the stand) through which passes a set screw whose lower end bears on the neck, depresses the cup, and causes ink to flow into it. To give additional steadiness, a spring on the back of the stand may be arranged to press on the top of the reservoir. If the projection on the reservoir be placed nearer to the screw, the stand need be only "a simple metal ring closed on the top, with the exception of an "opening just large enough to admit the main body of the reser-"voir, and allow it to vibrate freely on the fixed point." Or, the reservoir may be provided with trunnions fitting into bearings on opposite sides of the stand; in which case two adjusting screws are so placed on a bridge on the upper edge of the stand that one of them shall be on each side "of the centre of vibration."

[Printed, 8*d*. Drawing.]

A.D. 1860, January 31.—N° 247.

APPLETON, LEONARD.—"The arrangement and expeditious "removal of patterns, invoices, letters, papers, &c., more par-"ticularly tailors' patterns." The clip for carrying out this invention is composed of a bent metal arm having a pin projecting horizontally therefrom, and a lifting pin jointed to the end of the arm, opposite the point of the projecting pin; the end of the lifting pin is flattened and drops into a slot cut in the end of the projecting one. For tailors' patterns the patentee prefers a knob at the end of the projecting pin. For letters and invoices the standard of the bent arm is fastened to a piece of mill-board, and the jointed pin has a spring at the back to prevent its getting out of its place.

[Printed, 8*d*. Drawings.]

A.D. 1860, January 31.—N° 255.

COLE, RICHARD JOHN.—"Improvements in pencils and in "holders for the same." "The object of this invention is to "render that part of lead and other pencils, or their holders, which "is held between the fingers, less rigid, thereby giving a certain "amount of elasticity to that part." Cedar pencils and the like are manufactured in joints or strips, having metallic spiral or other suitable springs, or a piece of vulcanite india-rubber at or near the centre, "so that the spring may be moved upwards as "the pencil diminishes in length," the lead not being glued in, but left loose. Camel's hair and similar pencils may be treated in like manner. In metal cases or holders, "ornamental scales or "divisions" are used, beneath which is a spring "of thin straight "strips, spiral, or other convenient form." Holders are made of vulcanite, horn, or material "that can be softened and again "rendered hard, or nearly so," by winding strips thereof into a spiral form with a wire inside slightly larger than the lead intended to be introduced. The orifice at the point is a little smaller to prevent the lead from falling out, and the edges of the holder do not quite meet, as between them is placed a propeller, "consisting of a piece of serpentine sheet metal, with a pin "soldered or brazed through its centre."

[Printed, 4*d*. No Drawings.]

A.D. 1860, February 11.—N° 381.

COLE, RICHARD JOHN.—"Improvements in the manufacture "of lead and other materials for pencils." By this invention the lead or marking material of pencils is rendered slightly flexible. The process of manufacture is as follows.—Lead or plumbago, after being reduced to an impalpable powder is mixed with india-rubber in solution or other suitable adhesive material; for some purposes it will be desirable to mix therewith a small quantity of grease or other fatty matter. To this is added "a small quantity "of lampblack, and finely powdered coke and charcoal; these "are thoroughly incorporated together and subjected to a great "pressure to divest the compound of any superfluous moisture, "after which it may be moulded in suitable lengths for use." *Crayons or* chalk pencils may be manufactured by substituting

for india-rubber "fine gelatine or gum with the addition of a "little glycerine, to prevent the gelatine or gum getting hard or "crisp, and for dark colors a little charcoal finely powdered may "be used."

[Printed, 4*d*. No Drawings.]

A.D. 1860, February 13.—N° 388. (* *)

BALLANDE, JEAN AUGUSTE HILARION. — "An improved "paper and ink for writing and printing purposes." The invention relates to a paper prepared in such manner that by writing or printing thereon with a peculiar colourless ink the characters marked will become of a dark colour, and will allow a copy to be taken therefrom on another sheet of the prepared paper. For this purpose paper is impregnated with a "suitable quantity of proto-"chloride of mercury." The inks are composed of "hyposul-"phite of soda and alum, or hyposulphite of soda and a suitable "alkali or alkaline salts" "dissolved in water containing a "sufficient quantity of any suitable thickener.

"When the protochloride of mercury has been mixed with the "pulp during the manufacture" of this paper, the patentee considers this writing indelible.

[Printed, 4*d*. No Drawings.]

A.D. 1860, February 24.—N° 505.

BARANOWSKI, JEAN JOSEPH.—"Improvements in presses "specially adapted to the copying of letters." The press is constructed in the following manner:—On each side of a bed plate are cast or fixed two upright lugs (or they may be formed by bending up the plate), near the upper ends of which are apertures for the axes of two eccentric rollers. Each of the rollers has a lever cast on or formed in a piece with it. A top plate of corrugated metal, or metal lined with wood, is held up from the bed plate, and in contact with the rollers, by bands of elastic web or other suitable substance passed over both rollers, and connected to the upper surface of the plate. A metal loop passes over each roller, and is fixed to the top plate. The ends of the bed plate are bent down to strengthen it, and to hold a case containing damped blotting and other paper. This press is suitable for copying writings of an octavo size. For writings of a quarto size

the press is strengthened by corrugating the bed plate also, and by screwing or otherwise fixing it on to two transverse ribbed plates, the ends of which are turned up to form the lugs.

[Printed, 10*d*. Drawing.]

A.D. 1860, February 25.—N° 531.

FABER, JOHANN. — "Improvements in ever-pointed pencil "cases." The outside case is a hollow cylinder of wood or other material, closed at the upper end, and fitted at the other with a nozzle through which the lead, &c., to be introduced can pass very freely. The nozzle has cut in it longitudinal slits; on the exterior a screw is cut to receive a cap, which completely covers the nozzle, and has a hole at its end through which the point of the lead protrudes. The interior of the cap and the end of the nozzle are so formed that, as the cap is screwed on, it compresses the split end, and holds the lead firmly.

[Printed, 6*d*. Drawing.]

A.D. 1860, February 27.—N° 534.

MELVILLE, ALEXANDER.—"Improvements in the preparation "and manufacture of compounds for marking on paper and other "fabrics and substances." The patentee claims the invention of compounds, the marking produced by which is "of an indelible "character and irremoveable by ordinary reagents." In the specification are three receipts with the proportions which he prefers, but does not confine himself thereto. The first consists of plumbago or other carbonaceous matter intimately mixed with gum cowrie, tallow soap, alum or proto-nitrate of iron or other metallic salt, coal bitumen, and vegetable black; any suitable coloring or staining substance may be introduced. The second, of plumbago, fuller's earth, fine plaster of Paris, vegetable black, gum acacia, and for saturation, tallow and bitumen of Judea, or other mineral pitch, or coal tar pitch. The third, of plumbago, or other carbonaceous matter, or any suitable substance which contains staining and dyeing properties, fuller's earth, vegetable black, bitumen or coal tar pitch, tallow, alum, or proto-nitrate of iron, or other metallic salt or salts; the third may be improved for some purposes by adding thereto sulphate of copper, prussiate of copper, proto-sulphate of iron, and gallic acid. "In those "*cases where gallic* acid or proto-nitrate of iron is employed,

" prussiate of potass, prussiate of iron, ferro-cyanide of man-
" ganese, or the ferro-cyanides of any of the metals, may be
" substituted for the gallic acid or proto-nitrate of iron, or may
" be employed in combination therewith, and may be used as
" fixing agents." The machinery, &c. for manufacturing the above does not form any part of the invention, " which relates
" solely to the compounds herein-before mentioned and de-
" scribed."

[Printed, 4*d*. No Drawings.]

A.D. 1860, March 15.—N° 688.

PATTISON, WILLIAM MEAD.—(*Provisional protection only.*)—" Improvements in fountain pens and fountain penholders." This invention " consists," to quote the patentee's words, " in the
" use of a conical valve or plug for regulating the flow of the ink
" by the action of writing, this plug being made to fit into an
" aperture in the lower end of the fountain or reservoir, and
" more or less raised therefrom, so as to increase or diminish
" the aperture, according as more or less ink is required in
" writing. This plug is attached to a spring of vulcanite or other
" elastic material, which also serves as a socket for holding the
" pen. The force of this spring is regulated by a ring or ferrule,
" which is slid along it. At the bottom of the fountain or reservoir
" is fitted an internal spring of vulcanite or other suitable
" material, acted upon by the conical plug herein-before referred
" to, so as to cause it to vibrate and agitate the ink at the bottom
" of the fountain, in case it should deposit a sediment when
" not in use. Underneath the pen is a spoon or ink-holder, and
" between this spoon and the pen is placed a corrugated or other
" metal tongue, for the purpose of holding the ink in the spoon
" by collateral attraction, an opening being made in the upper
" end of the tongue to allow the ink to flow between it and the
" surface of the spoon. The head of the fountain or penholder is
" made in two parts, and provided with a perforated partition
" and air vent, the whole forming an air chamber at the top of
" the fountain, the air in such chamber preventing the escape of
" ink through the vent when the pen is not in use, the conical
" plug before mentioned also closing the aperture at the lower
" end of the fountain, consequently the ink is safely contained

" within the holder." A cap is placed over the pen when not in use, and it may be made to fit on to the head of the holder to lengthen it.

[Printed, 4*d*. No Drawings.]

A.D. 1860, March 28.—N° 800.

EWER, EDWARD.—" Improvements in fountain pens." The holder, which is the barrel or tube containing the ink, is reduced at the lower end to receive the pen nib; it has a small hole at the extreme end for the emission of the ink. To the lower end is screwed or otherwise fixed a nozzle piece between which and the holder the pen is introduced. The nozzle has a small channel immediately under the hollow of the pen, which channel forms a duct for the flow of the ink. By using separate nozzles of various lengths, the same holder can be used for different kinds of writing, the shorter the duct, the coarser the writing. The holder is filled by removing the nozzle, or a screw joint may be made elsewhere. At the top of the holder is a hole through which a stem passes, having at one end a facing of india-rubber or other suitable material, and fixed at the other end to the inside of a sliding cap. The stem carries a spiral spring, which has a constant tendency to push the cap upwards, and consequently to keep the facing air-tight against the hole in the top. By pressing down the cap, air is admitted, and ink flows to the pen. A tubular sheath is screwed to the cap, thereby protecting the pen and preventing the valve from being acted on by accident. In a modification, the valve and sliding cap are dispensed with; the top of the holder is completely closed, and the sheath merely encloses the pen by sliding on the holder. In this arrangement, the sheath may be used to lengthen the holder, if required.

[Printed, 6*d*. Drawing.]

A.D. 1860, April 5.—N° 868.

LEUCHARS, WILLIAM.—" Improvements in portable inkholders " and match boxes." The object of this invention is to attach to the above a more secure fastening than usual. The patentee substitutes for the ordinary thumb spring a small handle or plate on the lid, which passing through, communicates with a spring catch or other mechanical contrivance inside, and, when turned in

a circular direction, actuates the catch, thereby unfastening the box. In inkholders, he covers the inner part of the spring movement with flexible material, which forms a pad and prevents the escape of the ink.

[Printed, 4*d*. No Drawings.]

A.D. 1860, May 2.—N° 1101.

BAIN, ALEXANDER.—" Improvements in the means of obtaining " copies of letters and other writings or documents." The sheets intended to receive the impressions or copies are either bound in a cover of wood or other equally hard, rigid substance, or bound in a paper cover and placed in a wooden one. The sides of the cover are slightly convex. A clamp or rigid band of wrought iron, of such size and shape that its longer sides fit the sides of the cover, is placed thereon and moved backwards and forwards. The clamp may be made in two pieces connected by screws which pass through eyes in the ends of each piece.

[Printed, 8*d*. Drawing.]

A.D. 1860, May 9.—N° 1147.

SHAVER, ARCHIBALD G.—(*Provisional protection only*.)—" An " eraser and pencil sharpener," which is composed of a handle, of any material and pattern, and a blade of the best steel, thin towards its edges, and of a heart shape or approaching thereto. Between the shank and the blade are two curved indentations, sharp on the edges, to serve as a pencil sharpener; and on the flat portion of the shank, or some convenient part of the blade, is a groove, " acutely triangular in its cross section, and roughened " like a file on its two surfaces " to fine the pencil point. The blade, instead of being straight along its edges, has its point curved upward; " and this curve or convex surface constitutes the most " important feature " of the invention. The edges are bevilled to raise them above the surface, which is used as a polisher or burnisher; or the whole surface of the blade may be convex, which will answer the same purpose.

[Printed, 6*d*. Drawing.]

A.D. 1860, May 19.—N° 1232.

TURNER, ALFRED ROGERS.—" Improvements in penholders." The penholder is so constructed that it firmly grasps a pen when

placed in it, has a chamber for protecting the pen when not in use, and allows of its ready removal without applying the fingers thereto. It is made in two parts, the upper or holder, of wood or any suitable material, the lower or barrel, of metal or a metallic composition; they are united by a transverse slot and pin, so that the holder may rotate within the barrel. In the top surface of the barrel is a slot for allowing one end of a spring to extend through and press against the inside of one end of a cap, which is pivoted or jointed to the barrel; the other end of the spring is soldered or otherwise secured to the barrel, a portion of whose top surface is chamfered off to form a chamber for the pen when not in use. A slot is cut in the cap for removing the pen from the chamber, in case it adheres thereto. To strengthen the spring, and at other times to allow of its more ready depression, the holder extends a short distance underneath the upper end of the spring, the entering part having a recess formed in it to allow of the depression when the recess is brought directly underneath. To prevent the pen when in use from entering too far between the barrel and cap, a small projection is formed on the under side of the latter. The penholder may be made in one piece of wood or other material, and hold the pen between it and the cap by means of a spring and wedge; and, if the spring be very stiff, the wedge may be dispensed with.

[Printed, 6*d*. Drawing.]

A.D. 1860, May 22.—N° 1262.

HICKISSON, JAMES.—"Improvements in means or apparatus "for ascertaining the character of metals, particularly applicable "to the detection of counterfeit coin." For the purpose of carrying out this invention, the patentee constructs a holder, consisting of three parts screwed together; the lower part is fitted with a sliding ever-pointed pencil, or with a pen, or with both; the upper part holds one end of a stick of nitrate of silver, which passes into the middle part. The middle is also formed to contain some tartaric acid, which he prefers "to be in a solid form, by mixture "with plaster of Paris." The stud of the pencil, or some suitable part of the holder, has a roughened surface, or "a coating of "emery or other substance adapted to be used for taking off a "*portion* of the surface of the metal to be tested."

[Printed, 6d. Drawing.]

A.D. 1860, May 30.—N° 1330.

GORDON, THOMAS.—(*Provisional protection only.*)—"Improve-
"ments in inkstands." The bottles of these inkstands are made to resemble cannon, closed at the muzzle and open at the touch-hole, where the dipping cup is fitted. The bottles are suspended on centres in metal arms surmounting spindles which descend through the stands and are fixed underneath to metal arms; to one end of each of these arms is affixed a flat strip of elastic material, to the other, a piece of catgut, which "is passed up a
"tube fixed over a hole made in the stands, or placed horizon-
"tally, or a groove can be made in the stands, in either of which
"moves a disc of metal or other suitable material." The other ends of the catgut are fastened to one side of the disc, and through a hole in its centre is passed and fixed, on the same side as the catgut, one end of another strip of elastic material, but of a cylindrical or square shape to make it stronger, the other end being fastened to the top of the tube when it is vertical, or to any convenient part when horizontal, or when a groove is cut. By depressing the disc, the bottles partly revolve, "at the same time they
"rest on and glide up a curved edge piece of metal fixed on the
"stand near to the spindles, till their muzzles become elevated at
"an angle of about 45, and at right angles to the front of the
"stand, in which position they can be maintained by means of a
"pin (projecting from the disc) being placed in a small slit made
"in the tube, transversely to a larger one made down the same,
"and in which the pin moves, at the same time the ink flows to
"the other end of the bottles and supplies the cups."

[Printed, 4*d*. No Drawings.]

A.D. 1860, June 16.—N° 1466.

MYERS, MYER, MYERS, MAURICE, and HILL, WILLIAM.—
"Improvements in holders and connectors for holding papers and
"fancy wares exposed for sale, or for private use." The patentees describe twenty clips or holders, the size and shape of which vary
"according to the description of article or articles they may be
"required to hold." The use of the clips is to exhibit articles in shop windows, but as some of the clips are convertible into paper holders, book markers, and paper knives, a description of such belongs to the present series. Many of the clips are made from one piece of sheet metal; a blank is cut out, pierced, and bent

in such manner that the top forms a hook for suspension from "a "cord or wire as commonly stretched across shop windows and "other show cases;" the bottom, a hook to which the article to be exhibited is attached, and from the body a tongue projects "for holding the price ticket." Others are formed of more than one piece and united by ears and by passing through slots. One of the former class, "principally designed for holding a railway "ticket," has the top bent back so as to serve as a spring and the bottom "bent at right angles;" if, however, instead of bending the bottom it is elongated, the clip becomes a paper knife or a book marker, or both. Of the latter class a paper holder is made as follows:—The back has the lower part serrated and the top formed into a hook (if the holder is required for suspension); from the body is cut out a tongue which rises through a slot in the front part, passes down a portion of the front and through a second slot when it is "bent under, by which simple means the "two parts are united;" the tendency of the spring tongue "to "assume a flat position" with the back "affords the required "force for holding the lower ends together." Or (a method preferred by the patentees) the spring is a separate piece attached to the back by bending its extreme end down through a slot and by ears; it then passes up and along the top part of the clip and is secured as before. By making the back of mother-of-pearl or other substance and elongating it, the clip is converted into a combined book marker and paper knife. There is described also "a "tweezer form of connector" made either of sheet metal or of wire; the opening (and closing) of the lower ends is regulated by a slide whereon the ticket tongue is cut out.

[Printed, 1*s.* Drawing.]

A.D. 1860, July 16.—N° 1718.

BAIN, ALEXANDER.—(*Provisional protection only.*)—"Improve-"ments in means, apparatus, or articles for holding and sup-"plying ink." The object of this invention is to raise a supply of ink without dipping into or exposing the main contents of the inkholder. In one arrangement, the neck and stopper are constructed straight (their contiguous sides being smooth or threaded) and the latter fits so accurately that it works up and down as a piston. Air is admitted by forming a recess either at the side of the stopper at its lower part, or of the neck at its upper part, or

by drawing out the stopper. The dipping cup "is sunk in, "fitted on, or connected to the stopper," a tube passing into it, and descending into the inkholder. In another arrangement, the stopper fits outside or around the neck. "To avoid spirting, "entry of air, and premature descent of the supply raised," a washer is interposed between the rims of the stopper and neck, or a pin is passed loosely through the tube, having a washer or disc at each end outside the tube, held on by a stud or otherwise; or the upper end of the tube may be closed by a cap perforated at the sides. "The stopper may have a rim projecting "outward for convenience of handling, and a rim may project "inward over the edge of the cup to avoid spilling."

[Printed, 4*d*. No Drawings.]

A.D. 1860, July 20.—N° 1760.

PINKNEY, ROBERT.—(*Provisional protection only.*)—"An im- "proved pencil case." "This invention," to use the patentee's own words, "relates to pencil cases, in which the marking ma- "terial is loosely inserted, and 'propelled' and 'withdrawn' as "required for use, and consists in 'propelling' and 'with- "drawing' the lead or other marking material by means of a "ratchet motion instead of a screw or spiral motion, as hitherto "used."

[Printed, 4*d*. No Drawings.]

A.D. 1860, August 9.—N° 1928.

EARLE, HENRY, and EARLE, WILLIAM.—"An improvement in "connecting skins or sheets of parchment, vellum, or paper "together, and in attaching seals to deeds and other instru- "ments." This invention consists of a metallic clip, part of which is passed through the parchment, &c. and clinched to the other side. For connecting skins or sheets, a piece of soft brass, or other pliable metal or alloy of any shape is punched at acute angles, so that two or more fangs may be turned up at right angles. A hole is cut at a suitable distance from the upper left corner of the skins or sheets, and the fangs are passed through. A washer (if preferred) is then placed on the back, and a slight blow will turn the fangs down and make a secure fastening. For attaching seals to deeds, the clip is circular in form, and the face covered with a piece of any suitable woven fabric for receiving the

wax, the fabric being held fast by bending over it the edge of the clip. For further security the fangs may be provided with barbs.

[Printed, 6d. Drawing.]

A.D. 1860, August 10.—N° 1936.

UNDERWOOD, JOSEPH. — (*Provisional protection only.*) — "An improvement or improvements in dressing cases and writing "cases." The patentee describes his invention as follows :— "My invention consists in the addition to dressing cases and "writing cases of an expanding pocket. I make the said ex- "panding pocket, by preference, of the size of one side of the "dressing or writing case, and connect it to the said side by "means of elastic bands, joined at one end to the bottom edge "of the pocket, and at their other ends to the said case. The "flap which turns over and covers the open side of the pocket is "of such a length that it will cover the said open side of the "pocket when the pocket is expanded. The said flap is made to "engage with the lock of the case when the pocket is more or "less full, either by a spring slide in the said flap carrying the "staple which enters the lock, or by making several openings in "the lock case, in either of which a staple on the flap may enter "and engage with the lock"

[Printed, 4d. No Drawings.]

A.D. 1860, August 11.—N° 1946.

WILKINS, JOHN. — "An improved inkstand," whose component parts are an inkholder of glass or any suitable material, a conical dipping cup, a tube containing the ink which is in use, a flexible tube, a flexible hinge of vulcanized india-rubber, a split metal washer, a collar, and a ball valve. The cup is fastened into the neck of the hinge; over this is pressed the ink tube, to whose end is attached the flexible tube; the whole is placed in the neck of the holder. The remaining part of the hinge is turned down round the neck, and the washer and collar are put on it. When the cup is pressed down the ink will rise from the holder into the tube. To protect the ink perfectly from dust and the atmosphere a ball valve is placed in the ink tube. Various slight modifications may be made in the above arrangement without altering *the principle,* namely, the application of a flexible hinge.

[Printed, 8d. Drawing.]

A.D. 1860, August 17.—N° 1998.

GARNETT, JOHN. — "Improvements in writing desks and in "apparatus connected therewith." The patentee describes five inventions connected with his desks :—First, a compartment with four partitions, between which the pens, &c. are placed, spaces being left on each side for their ready removal when required. Second, an inkstand, in which is "an inclined or spiral dip regu- "lator" of wood or suitable material, secured to a vertical spindle which passes up through the cover and is packed air-tight at the orifice by an india-rubber ring tightened up by a nut; an indicator on the top of the spindle shows the position of the lowest part of the incline, and serves as a handle to turn or adjust it; and a lid is centred on the spindle and packed on the under side, so as to be air-tight when pressed by the nut. Third, a stamp damper and fixer, constructed on the fountain principle; it consists of a water vessel enclosed in a case, the inverted mouth communicating with a pad, and a presser (having its under side faced with gutta percha and furnished with sharp points), which when not in use is turned sideways and rests upon the edges of the trough containing the pad; consequently it is kept from contact with the pad; a spring engaging into a nick on the top of the presser holds it in its place. Fourth, a gum holder, also on the fountain principle; the gum is contained in an inverted vessel enclosed in a case, and the brush is made large enough at its lower end to serve as a stopper; a packing ring keeps the mouth air-tight, and a spring (as above) keeps the brush in its place; and a scraper is fitted inside the mouth to remove any excess of gum from the brush. Fifth, a glass writing tablet, to obviate the liability of the pen to stab or tear thin writing paper; and in combination therewith a clip composed of an under plate, two metal spring fingers rivetted thereto, and a hinged plate which serves as a clasp.

[Printed, 10*d*. Drawing.]

A.D. 1860, August 24.—N° 2037.

PRITTY, HENRY. — (*Provisional protection only.*) — "Improve- "ments in apparatus used to damp paper for copying letters and "other documents." The apparatus consists of a wooden roller and two water tubes. The roller turns freely on an axis fixed to a handle at one end; it is kept immersed in water when not

required for use. The vessel for containing the water is a tube, closed at bottom, and of such length as to admit of part of the handle coming above the top. At the upper part of this vessel is a tube suitable for holding a supply of water; this tube is closed on all sides, but has an opening at the bottom which opens into the upper part of the vessel, just below the point at which it is desired to maintain the water level when the roller is not in.

[Printed, 4*d*. No Drawings.]

A.D. 1860, September 11.—N° 2192.

MENNONS, Marc Antoine François.—(*A communication from L. M. H. Fromont.*)—"An improved apparatus for sealing "letters and other documents." In its simplest form the apparatus consists of a plate of metal or other material having a cell formed therein with its centre pierced through in the shape of the seal employed. To this plate is hinged an upper plate, in the centre of which is fitted the seal, and round it is cut a channel for the excess of wax. A handle may be adapted to the upper plate, or a statuette, &c., which will serve as a paper weight. If the seal have "open-worked or other complicated designs," it is provided at the back with a stalk, which passes through the upper plate into a ferrule fitted thereto and carrying a handle. In the ferrule is a spiral spring surmounted by a metal washer, which is kept down by a pivot. The pivot, which has a knob at each extremity, works in a vertical slot in each side of the ferrule, and in a hole drilled in the stalk. In another arrangement, somewhat similar to the ordinary embossing stamp, pressure is produced by a lever which slides at each stroke in a metallic ring or strap at the back of the seal.

[Printed, 8*d*. Drawings.]

A.D. 1860, September 15.—N° 2249. (* *)

BARNWELL, Stephen, and ROLLASON, Alexander.—"Improvements in combining and mixing certain solutions of "pyroxylene with animal, mineral, and vegetable substances, by "which its quality is altered in such manner as to produce hard, "resistent, adhesive, plastic, or resilient compounds and articles "unalterable in their nature and varied in colour, which said "*compounds*, in a state of solution, may also be advantageously

" employed as paints or varnish." The pyroxylene is made in preference by steeping common rags in nitro-sulphuric acid. The acid used on a former occasion, made up to its original strength by a little stronger acid, is employed. The compound solutions or pastes of pyroxylene with other ingredients are formed according to their special requirements. The following is a list of ingredients :—" Oils : — essential, animal, vegetable, or mineral. " Gums :—resins, balsams, tar, pitch, bitumen, cements, wax, " tallow, and grease, india-rubber, and gutta-percha, ivory " and bone dust; powdered bark, farinaceous and amylaceous " substances, starch, and dextrine. Vegetable or mineral pig- " ments and bronzes may be introduced as colouring agents, care " being taken that everything employed in the compound be free " from water." Amongst " the more solid articles into which " this " compound may be worked up " mention is made of pens.

[Printed, 6*d*. No Drawings.]

A.D. 1860, September 22.—N° 2314.

ASH, ROBERT, and PETIT, JOSEPH LETIERE.—(*Provisional protection only.*) — " Improvements in metallic pens and pen- " holders." By this invention the inking of the table or article on which the pen is laid is avoided. This object is effected, first, with respect to barrel pens, by making the nibs or the pen proper of a curve of less radius than that of the barrel; or, secondly, by making the radius of slip pens largest at that part which is inserted into the holder; or, lastly, by constructing the tip or metallic part of the holder of largest diameter at the part where the handle is introduced.

[Printed, 4*d*. No Drawings.]

A.D. 1860, October 10.—N° 2469.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from J. J. Greenough.*)—" An eraser and pencil sharpener." Provisional protection was granted to Archibald G. Shaver on 9 May, 1860, for this invention, namely, an eraser of a curved form and having its convex side with bevil edges; also combining with it a pencil sharpener, by forming on each side of the shank a cutting edge, and between them a roughened groove for finishing the pencil point. The reader is referred for details to the abridgment of the said date.

[Printed, 6*d*. Drawing.]

A.D. 1860, October 11.—N° 2474.

WILLIAMS, WILLIAM MATTIEU.—(*Provisional protection only.*) —"An improvement or improvements in crayons for writing, "drawing, and marking." The essence of this invention consists in the use of magnesia, or the insoluble or nearly insoluble compounds of magnesia, whether natural or artificial, in the composition of crayons. The patentee prefers a mixture of calcined magnesia, finely powdered talc or steatite, white wax, and spermaceti or stearine, but does not limit himself to them or to any definite proportions. He fuses the wax and spermaceti or stearine, and incorporates therewith, by grinding or otherwise, the magnesia or magnesian compound, the requisite coloring matter being added either at the same time or afterwards. The composition is then moulded or cut into sticks or pencils. The crayons may be further hardened by the addition of resinous matter, such as copal, mastic, and Canada balsam.

[Printed, 4*d*. No Drawings.]

A.D. 1860, October 11.—N° 2476.

WILSON, THOMAS.—"Improvements in paper files or holders." The file first described is specially fitted for trades where sheets of paper or bags require to be suspended for ready use. It consists of a base plate, which may be screwed to a wall, counter, &c., and an arm fixed perpendicularly on it near the top. The arm is bent about midway, so that its free end is parallel to the plate. At the end of the free part is a boss, having a screw thread on its exterior, and perforated with a hole through which passes a pointed steel pin with a milled head or nut. The nut has in its interior a female screw fitting the screw thread. The pin is forced through the papers or bags, pushed home, and, when the screw is turned, enters a hole in the plate. In a modification of the above the arm is jointed to the plate by a screw, so that it can be turned aside; the pin is fixed on the plate; the boss and screw thread are slotted to receive the pin point; and a cap, screwed home on the thread, keeps the point fast. For holding letters, &c., which may require to be removed without tearing, a hollow pin or split tube, with its free end bevilled so as to form a cutting edge, is fixed to the plate at right angles; the tube *springs on* a solid pin, whose head is inserted therein after the *letters, &c.* are put on the tube. The plate may be of pasteboard

with a loop for suspension. To keep the letters, &c. steady and square two tubes may be employed, and the two pins may be connected by a cross piece, so that they can be drawn out together.

[Printed, 8*d*. Drawing.]

A.D. 1860, October 24.—N° 2588.

LACAIRE, GUILLAUME.—"An improved penholder," which is especially suited for children learning to write, and persons who have contracted a bad style. The place for each of the fingers is "marked by a cavity into which the finger drops naturally." The holder may be of any metal or material and manufactured with steel dies or matrices in the usual manner.

[Printed, 8*d*. Drawings.]

A.D. 1860, November 19.—N° 2835.

FORD, HENRY.—(*Provisional protection only*.)—"Improvements "in coating or enamelling paper, pasteboard, cardboard, cloth, "silk, or other similar fabrics." The coating renders the material to which it is applied waterproof, so that anything written or drawn on it can be readily effaced by "the moistened tip of the "finger," or "with a wet sponge." Paper thus coated will be "serviceable as a substitute for the material known as asses' "skin," and pasteboard or cardboard so treated can be used "for "children's slates," while a cheap coated paper will "make an "excellent waterproof packing paper for needles, plated wares, "and steel goods." Artists also will find the coated paper useful "as a sketching paper." The ingredients of the coating are "one pint of methylated spirits of wine, two ounces of shell-lac, "one ounce of gum juniper, one quarter of an ounce of gum "mastic, and from one quarter to one half of an ounce of clear "resin." The proportions, however, may be varied. "The "gums and resins having been thoroughly dissolved in the "solvent, and the whole of the ingredients well amalgamated," the mixture is applied with a brush to the surface of the paper, &c. When one coating is dry another is laid on, and the coatings are repeated "until a sufficient body of the composition remains on "the surface." As soon as this is set hard, the sheet is placed between plates of metal and passed between "a pair of ordinary "paper pressing rollers."

[Printed, 4*d*. No Drawings.]

A.D. 1860, November 20.—N° 2844.

PALLING, FRANCIS.—(*Provisional protection only.*)—"Improvements in fountain pens." In this invention a wire passes up the inside of the ink reservoir; and the bottom or outer end of the wire "has a knob or button affixed thereto, which should "be so adjusted as only to descend a limited distance to prevent "the too free egress of the ink from the reservoir." The use of the wire and button is to conduct the ink in a thin film from the reservoir to the pen. "An important feature in this invention "consists in being able to use the full aperture of the reservoir at "the outlet thereof." Another part of the invention consists in making the pen nib without a slit, and in forming the same with an indented channel. A conductor also is employed to convey the ink to the point of the pen.

[Printed, 4*d*. No Drawings.]

A.D. 1860, December 10.—N° 3021.

FILLIETTE, ADOLPHE JOSEPH.—"Improvements in presses "for copying, stamping, and embossing." The mechanism of the copying press is contained in a cast-iron or other box, opening on one of its sides, which can be locked up with a key; the door, however, may be dispensed with. In the lower part of the box is a plate carrying four wedges, which fit other four wedges fixed on or cast on an upper plate, on which the copying book is placed. Between two of the under wedges are two lugs, which receive a metal nut in which a screw works, being held in its place by a socket. The socket and the end of the screw have an aperture, into which fits a key turned by a handle. The book is wedged between the upper plate and the top side of the box, and cannot be taken out by anyone who has not the key. This arrangement may be reversed by working the pressure plate from above. In another copying press, a frame is employed, in which are two plates moveable about a hinge. A wedge is fixed on each plate, and a sliding piece with wedges inside is connected to the frame by a bar centred thereon; the wedge on either plate, and the corresponding one on the slider, may be omitted. In a third press, there are two wedges on a disc capable of turning on a centre by means of a lever made of the same piece, or fitting into holes on the periphery. The *plate under* which the book is placed has wedges corresponding to *those on the disc*, but in the opposite direction. A press for copy-

ing, or stamping and embossing, is constructed on a stand, having in its centre an open space, into which a circular wedge is fitted. The wedge is formed of two cheeks, connected by a number of cylindrical cross pieces, at different distances to suit the article to be acted upon. A lever fits between the cheeks, having a tooth entering between the cross pieces. The wedge works a projecting plane fixed or cast on a pressure plate, which has two lugs fitted into slides on each side of the wedge between ribs in grooves cut in the frame. The pressure plate is thus lifted up by turning the lever from right to left, and, when lifted up, the lugs are received into recesses in the frame. In a stamping and embossing press, the stamp and counterpart stand in a box which has an opening in front to admit the article to be stamped. The top part of the stamp has two lugs forming inclined planes, on which wedges are made to bear. A pinion gears into a rack cast or fixed on the wedge piece, and turns by means of a key similar to that in the press first described. A spring raises the stamp when released from pressure. For printing, the bottom of the box may have a drawer in front for the counterpart and inking cushion.

[Printed, 10*d*. Drawing.]

1861.

A.D. 1861, February 12.—N° 351.

OLDFIELD, WILLIAM.—"Improvements in writing and dressing cases." This invention is applicable to portable cases; the upper part, containing paper and envelopes, is made by means of a spring to stand in a vertical position when the case is opened out. This part is attached to the body by hinges, which are formed of the leather of the case, or of metal, or of the spring which actuates it. The spring is spiral (it may be of other shape), disposed on a wire fixed to the body of the case, and having at intervals extending arms, which "have a tendency to recede from each other by reason of the resilience of the coil which is placed in tension." On a side of the wafer and pen box (which is in the body), is a spring catch, which, when the case is shut, enters a notch in the upper part. A flap of leather forms a stay between the parts. In a modification of the above there is a top, which,

when unlocked, is arranged to slide off and form a writing slope. In dressing cases, the lid is attached to the body by a pair of butt hinges, which regulate the raised position; the part containing paper, &c. occupies a portion of the area of the lid and rises with it; or it may be separate and rise by itself.

[Printed, 10*d*. Drawing.]

A.D. 1861, February 13.—N° 370.

BLAKE, JOSEPH STARLING, LINGHAM, GEORGE CALLEY, and NICKLIN, JOSEPH.—"Improvements in the means of or "apparatus for holding or filing receipts, invoices, and other "papers or tickets, and which said means are also applicable for "holding other articles, such as fancy or other wares." These files are divided into two classes; one for holding papers, tickets, and the like; the other for exhibiting pictures, engravings, &c. The first is made of wire, or principally so, having one end bent in such a manner that the point, over which the article to be held passes, is protected and held in place by a portion of the wire (or an equivalent) formed into a hook. The other end is bent, according to the required use of the file, into a hook, loop, or ring. The file may be single or double, and with or without a stand. The second consists of a wire, bent and flattened so as to form a loop at the top, and two arms with a hook at each end, and extending up at the back of the picture; a metal slide, with two pieces pierced out and turned over to clip the arms, holds the picture safe above. Or the wire may be horizontal, and bent so as to have two loops in it and two hooks at its extremities, and a cord, passing through the loops, may be used for suspension; a wire slide, in the form of a serpent, unites the sides of the cord, and the serpent's head projects downward over the top of the picture.

[Printed, 10*d*. Drawing.]

A.D. 1861, February 19.—N° 409. (* *)

PIDDING, WILLIAM.—(*Provisional protection only.*)—"Improvements in envelopes and letters, and in the mode of "securing them, also in the seals or seal impressions or wafers "used for such purpose."

A line of perforations similar to those made on postage stamps *is made* near the sealing part of the flaps of envelopes. "I some-

" times place an adhesive substance on the outside of the tongues " of envelopes or sealing part of letters for the purpose of ad- " hering thereto the following described seals or seal impressions " or wafers, and which being impervious to moisture will prevent " their being clandestinely opened, and the envelopes and letters " will have the appearance of being sealed in the ordinary way."

" The seals, seal impressions, or wafers," are made of molten glass in moulds; " of porcelain and other appropriate powders " by compressing them in moulds to the required form, and then " firing, burning or vitrifying them;" and also " of any plastic, " oleaginous, resinous, or gelatinous materials or compounds."

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 4.—N° 545.

JAMES, JOHN. — " An improved instrument for sharpening " slate pencils, blacklead pencils, lead pencils, crayons, and " such like articles." The base piece of this sharpener is of wood or other material; it has in it a conical groove, over whose edges two steel cutters slightly project, fastened thereto by screws, working in slots (either in base or cutters), and thus supplying a convenient means of adjustment. Each cutter is double edged, or a square one may be used having all its edges sharpened. Instead of two cutters on opposite sides of the same groove, two grooves are sometimes made end to end in the base piece, and one cutter projects over both.

[Printed, 6*d*. Drawing.]

A.D. 1861, March 7.—N° 575.

WILEY, WILLIAM EDWARD.—" An improvement or improve- " ments in ornamenting surfaces." This invention is particularly applicable to the ornamenting of the surfaces of penholders, pencil cases, and such articles as have cylindrical or flat surfaces. The arrangement of colours necessary to imitate tortoise-shell, or designs in gold and silver leaf, or bronze, are printed upon paper or other flexible substance by lithography, or any process of printing, staining, or painting. The paper thus produced is glued or otherwise fastened to the surface to be ornamented; the article is then dried and varnished in the manner practised in the manufacture of papier mâché goods.

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 9.—N° 590.

DAVENPORT, THOMAS WILLIAM, and COLE, SAMUEL.—"Improvements in the manufacture of holders or handles for "pens, pencils, and artists' or painters' brushes." These handles are made of any material which will admit of being slit into thin strips and coiled up into a tapered or parallel tube or solid rod. The strips are saturated with any suitable adhesive mixture, and then twisted up into shape. When the adhesive matter is dry, the coil is painted and varnished, or decorated. A solid plug of wood is inserted, if requisite, into the thicker end to receive the pen or mount. The coil is made sometimes of two or more substances combined. When it is made of metal, very thin rolled strips are employed, cut at one end to a form capable of being manufactured into a pen or mount.

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 20.—N° 703.

TOWER, LEVI LINCOLN. — (*A communication from Francis Pickard Hale, junior.*)—"Heads for lead pencils, ink erasers, and "other articles of like character." To rub out pencil marks the head is made of india-rubber alone; to erase ink marks, about one-tenth part by weight of powdered emery or its equivalent is added thereto. The mould in which the head is formed is composed of three metal plates, namely, a cap, middle, and core plate, united by studs on the cap and core, which enter corresponding holes in the middle one. The mould, with the india-rubber inside, is subjected for a few moments to the action of both heat and pressure. The head may be either round or pointed; it has a socket formed in its lower end, by which it is attached to the chamfered end of a pencil.

[Printed, 6*d*. Drawing.]

A.D. 1861, March 25.—N° 754.

MORRELL, GEORGE FREDERICK. — "Improvements in the "manufacture of sealing wax." This invention consists in passing sealing wax, when in a plastic state, through between rollers with corresponding grooves on their surfaces either parallel to or at right angles to their axes. In the former case, there is a collar *formed on or applied* to each end of one roller, so that the collars *close the ends of* the grooves. If there be no collars, the grooves

are cut less in length than the rollers. The grooves are either of the same length as the required sticks or longer, and the sticks are cut into lengths afterwards; but the patentee prefers to mould long sticks by means of rollers having grooves cut at right angles to their axes and geared correctly together.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 16.—N° 933.

RANSOME, ROBERT.—"Improvements in inkstands." The patentee has invented an inkstand which may be conveniently carried in the pocket, and yet have a broad base to support it when placed on a desk. The ink vessel (rectangular being the preferable shape) is surrounded by a close fitting frame of metal or other material; it is mounted on pivots which slide in slots in the frame, so shaped as to allow the vessel to be moved into either a vertical or horizontal position. In one modification, the frame is an open box (by preference made of metal); a moveable link is hinged to the bottom of the box and to the bottom of the ink vessel; there are four grooves in the sides of the box for the passage of the pivots; and there is also a spring catch to hold the vessel in its place when not in use. In another modification, the pivots work in holes in the frame; and the end of one or both pivots is squared to receive the action of a spring or springs, by the effect of which the vessel is held in either position as required. The spring may be dispensed with, provided the vessel fit sufficiently tight within the frame; or the frame itself may be made elastic.

[Printed, 6*d*. Drawing.]

A.D. 1861, April 27.—N° 1065.

RAY, GEORGE G.—"An improved penholder," which is composed of a non-elastic handle of wood or any suitable material, and an "elastic rubber pen supporter" applied to its lower end. The supporter is usually of a tubular form and sufficiently long to serve as "a soft elastic cushion to the fingers."

[Printed, 8*d*. Drawings.]

A.D. 1861, May 13.—N° 1212.

BETJEMANN, GEORGE, BETJEMANN, GEORGE WILLIAM, and BETJEMANN, JOHN.—(*Provisional protection only.*)—"An

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" improvement in inkstands or inkholders." The following are the words of the patentees:—" We construct the cup into which " the pen is to be dipped with a movable bottom, and connect to " this bottom a nut which takes into a screw which works in an " ink reservoir under the cup. By turning the reservoir through " a collar, or otherwise, the depth at which the bottom is caused " to descend, and thus expose or let ink into the cup, can be " regulated. Instead of causing to rise and fall by means of a " screw, other contrivances may be adopted."

[Printed, 4*d*. No Drawings.]

A.D. 1861, May 22.—N° 1300.

CHESNEAU, JULES RENÉ.—" Improvements in pen and pencil " holders." " My invention," says the patentee, " consists in the " application to pen and pencil holders of a printed, embossed, " or engraved scale, comprising the multiplication table, and a " calendar of the days of the week, month, and year, their increase " and decrease, the changes of the moon and seasons, the holi- " days, and other indications of general utility. These scales, " which may be printed or embossed in any desired color on " paper, tissue, sheet wood, leather, or other matters capable of " receiving impressions, are applied to the stalks of the pen or " pencil holders by any convenient fixing process. Or again, " they may be printed, embossed, or engraved directly on the " stalks either by transfer, by dies or by the burin. If so desired " the arrangement of the multiplication table and calendar may " be varied, so as to permit of their being employed separately " instead of combined as above. The scale being applied, the " pen or pencil holder is finished off by polishing, or by a coating " of hard varnish, enamel, or glaze."

[Printed, 4*d*. No Drawings.]

A.D. 1861, May 23.—N° 1313.

DE LA TOUR-DU-BREUIL, HENRY MARIE FERDINAND JULES, VICOMTE, and DE LA TOUR-DU-BREUIL, ALEXANDRE MARIE AUGUSTE.—" A copying press, so called 'tele- " 'graph press.'" The press is constructed as follows:—On a frame of cast iron or other material are two rails, which are set at the required distance apart from two rollers by set screws; these *rollers revolve with* their trunnions in bearings either fixed to the *frame or capable of* being lifted by set screws, so as to afford an-

other means of regulating the distance between the rollers and rails. A carriage of cast iron or other material, the upper surface of which is provided with a sheet of zinc, gutta percha, or other not easily oxydizable material, moves forward and backward on the rails by means of two pairs of wheels; there is a cavity in the upper part of the carriage, in case that the sheet which is to receive the impression be part of a book. The first or wetting roller is of metal non-oxydizable by water, and provided with perforations for allowing the water (introduced inside it through one of its hollow trunnions) to wet the outer surface; it is covered with a perforated cylinder of zinc, which again is covered with a sheet of flannel, felt, or the like. The water flows from a reservoir through an india-rubber tube; the flow is regulated by a knob fixed to a slide bar on one side of the tube and a cog on the other side, the slide being acted upon by a spring. The second or pressure roller is covered with india-rubber or other elastic impervious substance. In a modification of this arrangement the carriage is replaced by a hollow cylinder, turning in bearings in standards on a bed plate; the trunnions of the rollers turn in the same standards. The copying book is placed inside the cylinder through a slot. In both arrangements, a third or drying roller, covered with any water absorbent, or through which steam or lighted gas can pass, may be fixed near the pressure roller.

[Printed, 8*d*. Drawing.]

A.D. 1861, June 5.—N° 1416.

CHAPMAN, OLIVER. — (*Provisional protection only.*) — "An "improved dressing and writing case." "My invention," so writes the patentee, "consists in combining in one both a dress- "ing and writing case, by making the upper part of the case fold "down upon a hinge, by which the two parts are connected in "such manner that it shall form an inclined slope or desk for "writing upon, at the same time that it affords space for con- "taining paper. The dressing case proper contains a case for "holding envelopes, pens, ink, and other usual requisites, which, "upon the case being opened, may by means of a spring be "made to rise up and present the articles it contains to the flap "or desk part. Upon the closing of the case projections on the "sides of the flap come in contact with the paper-holding case, "and depress it into its place."

[Printed, 4*d*. No Drawings.]

A.D. 1861, July 6.—N° 1723.

RIDSDALE, JAMES.—"Improvements in inkstands, applicable "to the stoppers of bottles." The inkstand is composed of an ink reservoir and a sliding stopper which acts as a piston for raising or lowering the ink. Inside the neck of the reservoir is a groove (or two internal flanges may be formed therein), in which is placed a ring of vulcanized india-rubber or the like. The stopper fits air-tight into the ring; it is slightly tapering, with a small hole through it and a dipping cup at its upper extremity. The ring may be outside the neck, and the stopper made to fit over as a cap, having attached to it a tube which extends from the dipping cup to within a short distance of the bottom of the reservoir. These arrangements may be adapted to either the inside or outside of the necks of bottles.

[Printed, 6*d*. Drawing.]

A.D. 1861, July 17.—N° 1798.

MASON, JOSIAH.—(*A communication from Jean Benoit Mallat and Edme Victor Saglier.*)—"An improvement or improvements in "metallic pens." The nibs or writing part of the pen are made up at the back of four planes inclined to each other at obtuse angles. The middle planes have at their junction a piercing, which communicates with the central split; and, as they approach the point, pass into a curve. The outer planes extend either nearly to the point or to about the middle of the nibs; in them are made two, three, or more piercings at right angles or slightly oblique to the central piercing. There may be a neck formed between the nibs and the semi-cylindrical part of the pen.

[Printed, 6*d*. Drawing.]

A.D. 1861, July 18.—N° 1813.

JAQUES, JAMES ARCHIBALD, and FANSHAWE, JOHN AMERICUS.—"An improved apparatus for or mode of stopping, "plugging, or closing inkstands, bottles, and other vessels of "capacity." The stopper is an elastic screw made by covering a plug of any hard substance with uncured india-rubber, prepared by admixture of sulphur for vulcanization, screwing it into the female screw of a mould, similar to that in the neck of the vessel, and submitting it "to the ordinary curing operation," whereby an accurately fitting male screw is formed; or, the stop-

per may be made by lapping a thickness of soft rubber round a hard rubber or other core, and screwing it into a metal female screw, in which it is to be vulcanized. The female screw in the neck of the vessel is cut in a socket of hard material and fixed therein, or it may be made in the neck itself. The elastic female screw may be in the neck, and the stopper may be of hard material. For stopping wide mouthed vessels, the elastic screw is secured to the outside of the neck, and the cover is made of metal, glass, earthenware, &c.; the screw slightly laps over or extends above the edge of the neck in order to produce a perfectly tight fastening when the cover is screwed down; the same effect is obtained by placing an elastic washer at the bottom of the neck. A stopper for a ship's watertank is made by screwing on the top thereof a metal plate with a large opening, in which is cut either a female or a male screw, the stopper having an opposite one, and either one being elastic and the other rigid. To construct an inkstand on this principle, the neck of the reservoir is roughened, and has a male screw (moulded, &c. as before) thereon; the cover has a corresponding female screw cut therein. In the centre of the cover is cut a female screw, into which is inserted a plug provided with an elastic screw. The plug is perforated and has at its upper end a dipping cup; its lower end reaches to nearly the bottom of the reservoir. Or the plug may be solid, the dipping cup, with a descending tube at its lower end, permanently fixed to the cover, and the cover cemented to the neck. Or the inkstand and cup may be wholly of glass or other material, except the screw plug, which must be elastic.

[Printed, 8*d*. Drawing.]

A.D. 1861, July 19.—N° 1826.

NEWTON, WILLIAM EDWARD.—(*A communication from Francis Tryon, George Heydecker, and William Van Anden.*)—"Improved "apparatus for copying letters or writings." This "cheap and "portable apparatus" consists of a cylindrical roller of metal, wood, or other material, either hollow or solid, in which is a longitudinal groove with its opening "not so wide as the internal "capacity," and leaves of copying paper bound or stitched in a flexible wrapper, which the patentee prefers to be of "polished "American cloth" or other waterproof substance. A sheet of damped calico is placed over the leaf of copying paper, and the letter (a sheet of plain or waterproof paper) over the calico; the

book is inserted at one end of the groove, drawn along it, lapped round the roller, and rolled to and fro on a flat surface.

[Printed, 8*d*. Drawing.]

A.D. 1861, August 23.—N° 2112.

EVANS, WILLIAM, and CONCANEN, EDWARD.—(*Provisional protection only.*)—"A new manufacture of pens or writing instru-" ments." These pens are made from sheets of horn in its natural structure, or dissolved and formed into horn sheet by the ordinary process. Blanks are stamped or cut out from the sheet, softened by steam or other means, moulded to the form required, furnished with splits, and "allowed to resume the natural state of " the horn from which they were manufactured."

[Printed, 4*d*. No Drawings.]

A.D. 1861, September 24.—N° 2379.

WILEY, WILLIAM EDWARD.—"Improvements in pens and " penholders." The first improvement in pens consists in attaching thereto a metal tongue (for the purpose of holding ink) depending for its elasticity on a band of vulcanized india-rubber or other elastic substance acting on it in such manner as to press it towards the nibs and keep it in contact with them as they open in writing, but not to interfere with their elasticity. Or the tongue may be of vulcanized india-rubber, or metal sufficiently elastic to press forward and remain in contact with the nibs. The second consists in applying with a brush to the lower parts only of metal pens a coating of varnish combined with a pigment, leaving the upper parts uncoated; when the coating has become perfectly dry, the nibs must be separated. The penholders are constructed with three recesses; one for the thumb, the others for the fingers; springs are placed in the interior to prevent the pen stems from being introduced incorrectly. The holders are made of compositions in a plastic state, either solid or tubular, " by forcing such composition through dies or moulding orifices " by hydraulic or other power."

[Printed, 6*d*. Drawing.]

A.D. 1861, September 25.—N° 2388.

LENK, CARL GUSTAV.—(*Provisional protection only.*)—Improve-*ments in penholders* and pens. The penholder is a cylinder of

brass or other metal or material; in the top of it is a cork, above which is a screw in connection with a wire which goes down the cylinder to open or close the same by a pressure of the screw. The pen is at the bottom of the cylinder, and made of steel like the common writing pens, "but the chief thing in the whole "invention consists in a little hole in the pen through which, by "a certain pressure of the air, the pen is allowed to discharge "only so much ink or fluid as is wanted for writing or designing." Four sorts are manufactured; "three of them are for drawing or "designing, and ruling for music paper with five points, so as to "make five lines, and common handwriting." Such as are required for ruling music paper and handwriting have no wires connected with them. "The writer can use any pen to his taste, "as nearly every one, with the exception of a few sorts, can be "adapted to the penholder."

[Printed, 6d. Drawing.]

A.D. 1861, October 3.—N° 2472.

WOOD, JOSEPH.—(*Provisional protection only.*)—"Improve- "ments in the manufacture of metal pens and holders, in tools "employed therein, and in cards for carrying the same." By this invention the point of one pen is cut out from the tail end of another, "and so on for as many pens as the strip of metal will "make." The pens are dished between the two side slits, to form a reservoir for the ink, and the wings, made by the metal which is cut out for the points, afford a means for securing the pens in the holder, the latter being made in such manner that the wings, when inserted, become interlaced. The tools for cutting the diagonal lines of the pen and for stamping the name or other device are fixed in the ordinary press; the cutting of the longitudinal and parallel lines and the raising of the pen are effected by means of a pair of rollers, having the necessary steel cutters and tools keyed on to them, and performing likewise the duty of feed rollers. The tools for stamping and cutting out are four, which, when laid together and secured in an iron frame, form the bottom die plate of the press; there are notches and indentations at the sides for holding and screwing them together. The circular cutting and raising tools are of two kinds; the former is turned on the edge in a concave, the latter in a convex form, being made of a less thickness than the former to admit of

the introduction of india-rubber washers on each side for facilitating their proper working, &c. The pens are delivered from the rollers ready for hardening and tempering. By changing the ratchet wheel, each row of pens can be cut of any required length, and the distance between the side slits and the points can be increased or diminished. Cards for carrying pens are formed by stamping or otherwise raising portions of the surface thereof, leaving spaces between for the reception of the pens and penholder.

[Printed, 4*d*. No Drawings.]

A.D. 1861, October 19.—N° 2608.

HUDSON, WALTER GREVILLE CONYERS.—(*Provisional protection only.*)—"An improved portable apparatus for copying "letters and other written papers or documents." In a case of wood or other material, or both combined, and through either the centre or some other part thereof, is inserted a wooden or metallic roller, having attached to one end of it, which protrudes through one end of the case or forms part of it, a toothed wheel; near to the wheel is a moveable check to prevent the roller from receding after being wound up by a spanner or key. To the roller is connected a sheet or piece of cloth, which passes through the front of the case, and on which is laid the letter to be copied; the copying is accomplished by means of the leverage obtained by pressing the spanner or key.

[Printed, 4*d*. No Drawings.]

A.D. 1861, October 24.—N° 2659.

BAKER, JOSEPH.—(*Provisional protection only.*)—"An improve-"ment or improvements in ever-pointed pencil cases." The lead holder is hollow from end to end, and the pencil case open at its top, so that a fresh lead, when inserted, pushes back the remnant which passes out at the top. The lead holder is made of slit or unsoldered tube, and on its outside are the teeth "which engage "in the screw on the inside of the body, and by which the lead "holder is propelled."

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 5.—N° 2781. (* *)

BOURQUIN, JOHN PETER.—(*Provisional protection only.*)—"*Improvements* in ornamenting the covers of photographic

" albums, books, writing cases, and other like articles," " by " applying thereto decorations resembling inlaid woods, known " as marqueterie and wood mosaics." " This I propose to effect " by printing upon veneer mosaic and other designs, and thereby " imitating differently colored woods arranged in patterns. " Having selected, say, a veneer of white wood, I attach the " same to cloth by cement before printing, to protect it from " breaking or splitting under the pressure to which it will be " subjected. The wood being damped is placed in the litho- " graphic press to receive the prepared design, which is then " transferred thereto in the same manner as colored designs are " applied to paper. When printed with the requisite number of " colors to complete the pattern the wood is laid aside for the " colors to harden, and when this is accomplished the wood is " polished and varnished, and may then be applied to the book " or other cover."

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 11.—N° 2828.

LESLIE, GEORGE.—(*Provisional protection only.*)—" Improve- " ments in pens and writing instruments." The patentee makes his pens of hardened caoutchouc, gutta percha, or gum, known by the names of vulcanite or ebonite. He moulds them into the proper shape, while the gum is in a plastic state, and hardens them by the ordinary process, or shapes them with files or other tools, after the material has been hardened and become vulcanite or ebonite.

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 12.—N° 2840.

NEWTON, WILLIAM EDWARD.—(*A communication from Charles Close.*)—" Improvements in self-feeding inkstands." In this ink- stand the reservoir is connected with a dipping cup at its side by the usual passage at or near the bottom of each. The reservoir is close at top, and a tube, which forms the novel feature of the invention, " is arranged to form an angular connection with the " partially exhausted air space, at or within the top of the reser- " voir above the ink, and the pen cup," at or about the height at which the ink is desired to stand therein. The reservoir is filled through the cup; for this purpose a pipe is required, surrounded at or near its lower end with a cork or flexible disc of sufficient

size to form a close cover round the aperture in the bottom of the cup, and provided with a funnel tall enough to admit of the ink being poured into the reservoir to nearly its full height.

[Printed, 6*d*. Drawing.]

A.D. 1861, November 23.—N° 2941.

SANSUM, STEPHEN.—(*Letters Patent void for want of Final Specification.*) — "An improvement or improvements in pen-"holders." The penholder (both tip and stick) is made of one piece of sheet metal, and of the ordinary length and width. One end is suitably formed for the reception of a pen, the other part being substituted for the stick of ordinary penholders.

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 26.—N° 2965.

WILLIS, AUGUSTUS WILLIAM.—"Improvements in the con-"struction of pencil cases or holders." This invention is a substitute for the ordinary porte-crayon. A tube of metal, wood, or any suitable substance, is formed of length and bore sufficient to admit a cedar black-lead pencil; it is open at both ends and slotted from one extremity to nearly the other. Within the tube works a solid propeller, furnished at one end with two or more steel points, and on one side with a stud which moves in the slot. Or the tube may be of metal, "the edges of the skelp being "brought together but not soldered," and one end being secured by a ring or by soldering the edges; in this case the projection on the propeller should be in the shape of a slip or knife edge. The pencil is fixed by pressing one end on the points, and the top of the tube is covered by a moveable cap.

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 26.—N° 2971.

STEVENS, CHARLES. — (*A communication from Jean Baptiste Auguste Brasseur.*)—(*Provisional protection only.*)—"Improvements "in penholders." By this invention the pen "can be driven "from the holder without necessitating its removal by hand." The barrel of the holder is a hollow tube having a rim inside; *within it is a spring* which both retains and removes the pen. *The upper part* of the spring has two branches, which are pre-

vented from coming out of the tube by a ring on them which is unable to pass the rim. The lower part is curved, one part pressing against the pen, the other being furnished with a head which rests against the lower end of the tube and prevents the spring from entering too far. In a modification, the tube has a groove inside instead of a rim, and the spring has two heads, the upper of which is forced by a slight pressure into the groove. In another modification, the tube has a longitudinal slot in which the rivet of an outer tube slides. Inside the slotted tube is a spring, having on its head a ring by means of which it is rivetted to the tube on the side opposite to the slot; a ring presses the lower end of the spring against the side of the tube, and the pen is held between them. The latter ring has a hole in it, which the rivet of the outer tube enters, so that, when the rivet slides upwards, the ring rises, releases the spring, and the pen falls out.

[Printed, 6*d*. Drawing.]

A.D. 1861, November 26.—N° 2972.

STEVENS, CHARLES.—(*A communication from Louis Croc.*)—"An improved indelible anti-corrosive ink." "The coloring "matter principally used in the preparation of the ink is obtained "from the new alkaloid prepared from coal tar, and known under "the name of aniline, whose formula is C^{12}, H^{y}, A^{z}." The colours at present known are violet, red, and blue; these are employed singly or combined, or mixed with other coloring matters, according to the shade required. The other ingredients used in preparing the ink (the patentee does not confine himself to them) are acetic acid, water, and gluten; the acetic acid can be replaced by chlorhydric, tartaric, malic, citric or gallic acid, the gluten by a solution of fibrine, albumen, caseïne, proteïne, leïocome, or any sort of animal glue. The proportions are "acetic acid, 1,000 parts; water, 1,000; gluten, 100; violet "aniline, 20; and Indian ink, 10, in the preparation of black or "violet ink." For red ink, red aniline is substituted, and blue aniline for blue ink. The mode of preparation is by mixing the colours in a solution of gluten or any of its substitutes, and then dissolving them in acetic acid or other acid having the same properties.

[Printed, 4*d*. No Drawings.]

A.D. 1861, December 9.—N° 3084.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Humblot Conté.*)—(*Provisional protection refused.*)—"An improve- " ment in black-lead pencils." The invention consists "in " forming the black lead or composition used in making black- " lead pencils of any thickness and shape desired, and in dis- " pensing with the wooden or other casing, whereby effects " hitherto unobtainable by lead pencils may be produced."

[Printed, 4*d*. No Drawings.]

A.D. 1861, December 11.—N° 3103.

CLARK, WILLIAM.—(*A communication from Victor Hippolyte Solon.*)—(*Provisional protection only.*)—" Improvements in stop- " pering bottles & other vessels." The bottle, jar, &c. to be hermetically stoppered, according to this invention, is made with an inner edge in the neck, to which is fitted a disc of glass, porcelain, or other hard and impermeable substance; mastic is run into the joint formed by the disc and inner edge; and a stopper of wax, india-rubber, cork, or other material, placed on the disc, completes the closing. If the vessel be an inkstand, the disc fitted to the inner edge is pierced with a hole; a second disc, of the same substance and similarly pierced, and a "small washer solid " with the disc," are laid on the first; a washer of india-rubber, gutta percha, or any other elastic substance, is superadded, and the whole is crowned by a cap bearing on the washer and screwed or otherwise fixed to the neck. When a dip of ink is required, the upper disc is turned by means of a small knob until the holes coincide.

[Printed, 6*d*. Drawing.]

A.D. 1861, December 12.—N° 3115.

WILEY, WILLIAM EDWARD.—" An improvement or improve- " ments in pencil cases and holders for crayons and other solid " writing or marking materials, which improvement or improve- " ments may also be applied to crochet needle holders." The body of the case is a tube having a straight slit nearly from end to end. The head has a collar on which the upper end of the tube *is sprung*; and a groove in the tube engages with the collar, so *that the head is* capable of rotating. The screw, in which the

propeller works, is a helical coil of wire soldered or otherwise fixed at one end to the head; the propeller (a tube) slides in the slit by means of its hook. The rotatory motion may be obtained from the nozzle instead of the head. In this arrangement, the head of the case is closed and the end of the coil is fastened to the nozzle, which is attached by the serrated end of the case being burnished into a groove in the same. Crayon holders are made on the same principle, but of larger size. In crochet needle holders the unhooked end of the needle is permanently fixed in the propeller.

[Printed, 8*d*. Drawing.]

1862.

A.D. 1862, January 8.—N° 51.

HEATH, ANTHONY.—"Improvements in the construction of "inkstands." This invention enables a person to fill the dipping cup from the reservoir; it also limits the quantity of ink in the cup, and protects the pen point from the sediment. A frame, consisting of two plates of similar diameter, and secured to two or more uprights, is placed in the reservoir; the uprights are cut partially through from the lower end upwards. In the centre of the frame is a plate (called the rest), having two or more arms which work in the slots, and provided with two or more pins slightly projecting from the upper surface. The pins support the cup, which has holes pierced near the upper edge, and both cup and rest are kept in position by a spiral spring under the latter, or by spiral springs fixed to the arms of the rest and upper plate of the frame. The cup is filled by depressing the rest by means of a curved arm at the bottom of a tube which slides on a pin fastened to both plates. Inside the cup is a skeleton cup having a wire gauze at the bottom (or it may be perforated glass or metal); perforations at the side of the skeleton allow the surplus ink to pass through. The dipping cup is lowered or raised by the aid of two or more screws which pass through its collar and rest on the top plate; or by the collar "screwing into the neck of the larger "vessel."

[Printed, 8*d*. Drawing.]

A.D. 1862, January 31.—N° 253.

LITTLEHALES, DAVID.—"An improved plastic compound as "a substitute for papier maché." The patentee mixes oatmeal, flour, pea, bran, rye, barley, or linseed meal, or other farinaceous or oleaginous meal with tar or other varnish until it becomes of a thick pasty consistence; he then moulds it in dies, or forms it into sheets, and dries it in a stove. When perfectly dry and hard, he saturates it with linseed or any other suitable oil, and afterwards varnishes or colours it as is commonly done with articles of papier maché. He does not confine himself to the above precise details. All articles made of papier maché (amongst them penholders) may be manufactured of the above compound.

[Printed, 4*d*. No Drawings.]

A.D. 1862, February 3.—N° 288.

CLARK, WILLIAM.—(*A communication from Heinrich Sperl, Doctor Richard Hagen, and Wolfgang Springer.*)—"Improvements "in processes for preserving and colouring wood, denominated "xylochromic and xyloplastic processes." The part of the invention which belongs to this series is the substitution of cheaper woods for cedar, namely, birch, pear, lime, poplar, or alder. The preparation is as follows:—The wood is cut into short lengths and macerated in muriatic acid (H Cl) from about a week to a fortnight. The acid is eliminated by washing the wood with water. The wood thus prepared "may be compressed and moulded "to about half or three-fourths of its original bulk and retain the "form of the mould." To obtain the colour and odour of cedar, the prepared wood is impregnated by boiling with the following liquid:—hot water and sulphate of alumina poured several times on "one part in weight of logwood, ½ part of Pernumbuco wood, "1 part of Brazil wood, and 6 parts of cedar wood." In the Specification are detailed processes for coloring, preserving, hardening, rendering fire-proof, mineralizing, and veining wood for furniture, work boxes, &c.

[Printed, 8*d*. Drawing.]

A.D. 1862, March 12.—N° 675.

CLARK, WILLIAM. — (*A communication from Annet Jacques Nadaud.*)—(*Provisional protection only.*)—"Improvements in the "*manufacture* of colored inks," namely, red, blue, green, or

violet, from fuschine or aniline. A certain quantity of either, according to the colour required, is dissolved in a suitable volume of water; the solution is brightened by means of alcohol, and thickened with sugar or gum. The same bases derived from tar may be transformed into blue and green colours; and the patentee employs "such colours resulting from the transformation of aniline " for the manufacture of blue or green inks."

[Printed, 4*d*. No Drawings.]

A.D. 1862, April 2.—N° 926.

BROOMAN, RICHARD ARCHIBALD. — (*A communication from Eugene Recordon.*)—(*Provisional protection only.*) — " Improve- " ments in memorandum, pocket, and other books, and in pencil " and penholders to be used therewith." The first part of this invention consists in making the covers of memorandum books, &c., of slate or other substance capable of receiving writing. One cover is a sheet of slate held on three sides in a metal frame carrying hooked gudgeons. To the back of the cover is attached a metal band, beneath which the fourth side is slid. The ends of the band are bent to form slides into which the gudgeons take. The other cover, of any material, has in the centre a metal frame in which a slate is fixed; or both covers may be made alike. An ink holder is screwed on at one end, and the penholder, which contains a box for leads, acts as a stopper. A socket inside the cover is screw-threaded to receive a lead or slate pencil. The second part relates to the construction of a holder for lead and slate pencil. Within an outer case, which is partially slotted, are two tubes (one for lead, screw-threaded, the other for slate), each terminating in a split conical nozzle. A collared tube is screwed on the bottom of the lead tube; it has a rectilinear motion imparted to it by means of a stud which slides in the slot. To the collar is fitted a tube screw-threaded externally, and having two propelling rods, one at each extremity; to one end of this tube the slate tube is screwed. The propellers are worked by turning the nozzle of the lead tube.

[Printed, 6*d*. Drawing.]

A.D. 1862, April 2.—N° 934.

CLARK, WILLIAM. — (*A communication from Joseph Charles Thomas Devaux.*)—" An improved apparatus for manifold writing."

This invention comprises a desk of any form, containing certain mechanism; a penholder consisting of a stem with two barrels of unequal length, so that the pen points shall both be in contact at the same time with the separate sheets; and an inkstand having an opening of sufficient size for dipping the pens at once. The desk is made in two parts, one for writing on, while the other contains the mechanism. The former has two slots for the passage of the sheets; the surface between is furnished with an elastic pad. The sheets are held firm by metallic stretchers; and under the upper surface is a wire which prevents one sheet from touching the writing on the other as it passes underneath. A plate of sheet iron under the surface obliges the sheet passing over this surface to lodge under the first part of the desk. The mechanism of the other part is composed of, 1, two metallic plates furnished with guides sliding in grooves; 2, grippers united by means of the metallic plates, and formed of two bars or jaws connected by guide pins which permit of their movement—one jaw is hollow on the inside, the other projects so as to correspond therewith; springs are placed between them which cause them to open when a rod is turned by a key (the rod turns in bearings, and carries eccentric discs which open or close the jaws); or the jaws may be made to open by springs, and shut by levers actuated by a screw and raising pins fixed on the lower jaw; 3, a button head for turning the axis of two bevil wheels; 4, rollers fitted on the desk and furnished with thumbscrews which exert tension on two endless chains passing over both wheels and rollers—the chains "are actuated by means of hooks to the arms of the "grippers"—and, 5, rods for supporting the chains. There are also cross pieces (for strengthening the desk) on which are rollers whereby the desk may be easily moved about; an index for measuring the distance between the lines in writing; and a frame to hold the writing which is to be copied, fixed on the desk by thumbscrews, the copy being secured thereto by a clip. Copies may be obtained in triplicate by a suitable arrangement of the apparatus.

[Printed, 8*d*. Drawing.]

A.D. 1862, April 25.—N° 1213.

ROBERTS, RICHARD PERCY.—(*Provisional protection only.*)—"*Improvements* in the preparation of paper for copying letters

" and other documents, and in the preparation of copying ink." The object of the first part of this invention is to prepare the paper so that it will not require wetting or damping. For this purpose it is impregnated with " glycerine, or glycerine together " with tannin or oxalic acid, or glycerine together with sub- " carbonate of potash, or glycerine together with tannin and sub- " carbonate of potash." Letters, &c. may be copied upon paper thus prepared by simply placing them thereon and applying the ordinary pressure. The second part consists in "combining " glycerine, molasses, and the seeds known as albemoschus with " ink-making materials." The composition preferred by the patentee is distilled or other water, 1 gallon; logwood chips, 8 ounces; gum arabic, 1 oz.; molasses, 1 to 2 oz.; sugar candy, 1 to 2 oz.; Aleppo galls bruised, 8 oz.; bi-chloride of mercury, 5 grains; albemoschus, 10 grains; alcohol, 1 oz.; and precipitate black rubbed up with a little mucilage, 10 grains.

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 3.—N° 1324.

LEFEBVRE, PIERRE VICTRICE.—" Improvements in fountain " pens." On the top of the holder or ink reservoir, where a flanged tube is screwed on, is a diaphragm with a hole pierced through it. On the top of the tube is a screw plug, hollow and pointed, with a small lateral hole which communicates with the interior. The lower part of the reservoir is screwed to a solid cylinder " of light " construction," which is pierced to receive a narrow tube bent at its lower end. The cylinder "is split vertically," and in the split is fixed a flat spring with a clip at its lower part for holding the pen. The clip is composed of a longitudinal section of a metallic cylinder and a sheath of an inoxydizable tube of platina or aluminium; it is flat on one side, round on the other, and may terminate in a point. It is covered with india-rubber or other compressible substance to render more complete the closing of the bent tube, against which it bears. The supply of ink to the pen is regulated by a tongue of fibrous material which conducts it regularly from the bent tube to the extremity of the pen. This tongue can be attached to the bent tube or clip, whence it hangs in the interior of the pen, and terminates in every case lower than the commencement of the slit. All these lower parts are covered with a metallic tube, which is traversed by a screw abutting on

the clip or that part of the spring which is directly above it. The flow of the ink is regulated by the approach of this screw. To render the movement of the screw more easy, it should be graduated, and a needle placed in the back of the metallic tube, near the periphery of the head, to facilitate the adjustment; a small marked pin on the back of the tube will answer the same purpose. In order that the screw may not move of itself, a small partially split copper rod is fixed by its upper extremity to the tube. At the end of the rod is a nut which pins the nut of the screw, which by this contrivance will move with sufficient freedom and yet retain the position desired. There are modifications of this invention detailed in the Specification.

[Printed, 8*d*. Drawing.]

A.D. 1862, May 12.—N° 1415.

WALKER, HENRY.—"Improvements in making handles for "crochet needles, pencils, penholders, and other articles." The handles are made of paper or cloth, scaleboard, twine, or any convenient material, alone or in combination with paper. In making holders for crayons, lead or slate pencil, the patentee prefers to roll paper round tubes made of the above materials. Paper of width and length suitable to the article required is besmeared on one side with glue or other adhesive matter, and wound round a spindle of proper shape. When the spindle is withdrawn, the tube is covered with ornamental paper (especially "porcupine paper") or japan varnish, or varnish mixed with colored pigments. According to the shape of the spindle, so the tube is round, oval, oblong, tapering, &c. He makes handles for crochet needles and penholders which indicate "by the hands of "the users thereof the true position of the crochet needle, pen, "or other implement held by them," and others having a flattened or slightly hollow piece on one or both sides, that the thumb and first finger may keep the handle with its needle in its proper position.

[Printed, 4*d*. No Drawings.]

A.D. 1862, May 23.—N° 1557.

WILEY, WILLIAM EDWARD.—"Improvements in the manufac- "ture of certain kinds of penholders, which improvements may "*also be applied* to pencil cases and holders for crayons and

" other solid writing or marking materials." This invention relates to the penholders called orthodactylic, and consists, first, in making the thumb and finger plates from one piece of sheet metal joined together by short strips. " The middle finger plate " is afterwards bent into a plane at right angles to the other two " plates," and the set is then ready for fixing to the penholder. The fastening is effected by tongues on the plates engaging in piercings in the holder, and fixed with or without solder, or by soldering the plates without tongues. Secondly, in fastening the plates, when each is made separately, by means of tongues as before described; or " the top and bottom plates may be fixed by " a tongue on one end of the plate, engaging in a piercing in the " holder, and a pierced projection on the other end of the plate " engaging with an ear on the end of the holder." The patentee applies the plates, made in either way, to pencil cases and crayon holders, &c.

[Printed, 6*d*. Drawing.]

A.D. 1862, July 9.—N° 1971.

GILLE, JEAN MARIE.—" An improved calendar inkstand." The inkstand is composed of an outer vessel, in which are three apertures, " giving view to the dates;" an ink vessel, surrounded by a circle on which are marked the dates of the month; a species of saucer, pierced in the middle for the projection of the upper part of the ink vessel, and marked on its circumference with the days of the week; and an open circle, set in the bottom of the outer vessel, and having on it the names of the months. To change the month, the saucer and ink vessel must be removed from the outer vessel.

[Printed, 8*d*. Drawing.]

A.D. 1862, August 9.—N° 2235.

DE LA RUE, THOMAS.—" Improvements in the manufacture of " pigments and writing inks." Gum tragacanth, " partially dis- " solved or softened with water," is combined with glycerine in the proportion (by preference) of 1 ounce of gum, 1 quart of water, and 10 ounces by measure of glycerine; the compound is to be well stirred and allowed to stand for some days. Lampblack or other proper form of carbon is ground in therewith, " until a " paste of the consistence of strong printing ink is obtained."

To this is added and thoroughly mixed therewith, for an indelible writing ink, a solution of salep or gluten or glutinous substance in acetic acid; 8 ounces of solution of salep (1 ounce of ground salep to 1 pint of water), 20 ounces by measure of water, 16 ounces of vinegar, and 28 ounces of a solution of gluten in vinegar (3 ounces of dry gluten to 1 quart of vinegar). Isinglass dissolved in acetic acid may be used in place of gluten, and gum arabic in place of tragacanth. Colored pigments and inks are similarly prepared. Another pigment or ink is made by grinding "the black bye-product or waste substance obtained in the manu- "facture of aniline" with glycerine, prepared as before described; to render this sufficiently fluid for use, a solution of salep or gluten or glutinous substance dissolved in acetic acid is added to it.

[Printed, 4*d*. No Drawings.]

A.D. 1862, August 14.—N° 2283.

WELCH, GEORGE.—"Improvements in inkstands, metallic pens "and penholders, and other instruments and appliances used in "writing and marking." The patentee details four inventions with modifications. First, in inkstands; one consists of a tripod stand, suspended from which is a metal cup with an ink vessel inside; each leg has on it a hollow projecting piece for the insertion of a pen. A second combines with it a date dial and a pen rack, the dial being placed at the back of the stand, the rack on each side and near the front. A third is a cylindrical reservoir with a dipping cup at each end; the mouth is at the top of the cylinder, and the stopper is hollow, constituting a red ink holder; the cylinder may rest on a stand, having a pen tray and a handle at each end, or one handle in the centre, jointed to the stand, and capable of turning aside to give access to the red ink; or the stopper may be an open-jointed tube sliding along the cylinder, and having recesses for pens on the top. A fourth consists of two concentric cylindrical vessels, the outer one fixed to a stand, the inner one rotating; the inkholder is inside the inner one; in each is a similar opening, coinciding when in use, and a partial revolution of the inner one by aid of a rod and milled head, closes all access to the ink; on the top of the outer vessel is a series of penholders and wipers, constituting another of the inventions. One is made of four sheet metal springs (arranged nearly

in the form of an inverted hollow cone), which may have their lower ends covered with cloth or other absorbent material; they may be placed in recesses in the stand, or attached to another stand. Another series is arranged radially on a circular disc; helical springs, working in guide rods fixed in a central boss, press outwards curved plates; secured to the inner edge of the disc, and opposite each, is a fixed curved plate; the pens are thrust between the plates; and the disc is covered by a plate, openings being left for the entrance of the pens. Or the springs may be so shaped as not to require plates, and capable of holding a pen in their outer and widest loop. In another series, a piece, having semicircular projections on its face, is fixed to a block; on each projection is a curved spring, and the pen is held between the two. The holders and wipers may be used as paper weights. The third invention is rivetting or otherwise fixing a corrugated spring tongue to the back of the nibs of a pen, or a coiled wire to the concave side, for the purpose of taking up a larger supply of ink; or the pen may be made with side flaps turned nearly back against its concave side. The fourth relates to penholders. On the barrel is indicated the spot on which the thumb and fingers are to be kept, either by elliptical piercings or by roughening, impressing, or engraving; the barrel and pen may be made to slide on an ever-pointed pencil case, or on an ordinary lead pencil; the top of the case or pencil may have attached to it a piece of india-rubber, which may be covered with a sliding cap. A pocket penholder consists of an outer case with a straight longitudinal slot in it, and an inner rotating tube having a helical slot in it; the latter has a cap and a nozzle, bearing respectively against the top and bottom of the outer case. The pen is carried by a tubular piece, on which is a stud engaging in both slots. An ever-pointed pencil may be substituted for the pen and tubular piece.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1862, August 15.—N° 2298.

MENNONS, MARC ANTOINE FRANÇOIS.—(*A communication from Louis Jules Bazin.*)—"An improved apparatus for the pro-"duction of sealing wax impressions." The die with the device to be reproduced is mounted on the lower extremity of an ivory, wooden, or other handle, and a sliding socket, "provided with a

" knife, serrated, or other cutting edge," surrounds "the cylin-
" drical space of the die." The wax being spread in a melted state on a paper or other suitable surface, "a clearly defined seal
" is formed and cut out" at one operation by simple pressure. The apparatus may be in the form of "a pair of nippers provided
" on one jaw with the engraved surface, and on the other with a
" counterpart block." The seals thus produced "are coated on
" their under side with any suitable adhesive matter, and are
" applied to the sealing of letters and other documents in the
" same manner as the wafer labels at present in common
" use."

[Printed, 8*d*. Drawing.]

A.D. 1862, September 10.—N° 2488.

HANDS, FREDERIC, and HOLLAND, HENRY. — "New or
" improved compositions for the manufacture of black orna-
" ments, such as brooches, bracelets, earrings, and other orna-
" ments usually made of jet, which said compositions may also
" be applied to the manufacture of various other articles." The following is the composition for ornaments of small size:—30 parts by weight of finely powdered jet or scrap jet; 1 to 3 parts of india-rubber dissolved in coal naphtha or an essential oil, or liquefied by heat alone; 1 part of gum arabic dissolved in a very small quantity of water; 2 parts of varnish. The patentees do not limit themselves to these proportions. The ingredients are mixed, heated, and incorporated by subjecting them while hot to the action of a pug mill. The mucilage obtained from Irish moss boiled in water, or from isinglass dissolved in water, or from rice flour boiled with water and gum, or from a mixture of the three, may be employed in place of gum arabic. If the articles are to be inlaid with pearl, gold, or silver, the powdered jet is made into a plastic mass with isinglass dissolved in alcohol alone, without varnish, gum, or india-rubber. For bulky articles, such as ink-stands, finely powdered black oxide of manganese or drop black may be added to the jet, now used in a smaller proportion. After the composition is cool, it is rolled into sheets or cut up into pieces of convenient size. In making large hollow articles, such as workboxes, the sheets are joined by heating their edges and by *pressure*, or by a mixture of varnish and india-rubber. As the *composition remains* plastic when cold, the articles made therefrom

are hardened by stoving at a somewhat higher temperature than that employed by japanners.

[Printed, 4d. No Drawings.]

A.D. 1862, September 15.—N° 2529.

CHANT, EDWARD GEORGE.—"Improvements in self-binding "portfolios or holders for newspapers, music, documents, letters, "and other papers, or for woven or other fabrics or articles which "it may be desirable to bind or hold together." The papers, &c. are secured by means of strings (or their equivalents), metal loops, and "spring compensations," which "compensate for the varying "thickness or quantity of the articles to be bound or held "together." At the edge of each cover (next to the back) are metal loops, and on one side of the cover as many spring compensations, consisting each of "an endless or double band of "india-rubber webbing" with a metal loop at its near end. To each loop on the cover edge (on the side opposite to the spring) an endless or double string is fastened by a slip knot; but before the string is made endless it is passed through an eye drilled "at "or near the middle" of a tag or needle, which is "made flat "with grooves at both sides extending from the ends farthest "from the point thereof to half the length, that is, to the said "eye," in order to allow the string to fit therein. The papers, &c. are to be pierced through by the tags, which are then to be passed through the loops on the opposite cover edge into the loops on the springs. The spring loops are of such shape that the tags cannot be disengaged from them "without intentional "movement." Instead of fastening one end of the string to a loop there may be a tag at each end, "attachable in the same "manner" to a similar spring on the other cover side, so that "double spring compensation will be obtained."

[Printed, 6d. Drawing.]

A.D. 1862, September 22.—N° 2586.

SANDERSON, JAMES.—(*Provisional protection only.*)—"Im-"provements in writing desks and cases." These desks are known as tourists' and students', and portable desks and cases. The sides are formed by two uprights, between which are compartments for paper, envelopes, &c., and at the bottom of the compartments one or more drawers. There may be a pocket flap

at the back. The folding flap is made double and hollow to contain papers, letters, and the like; and there are spaces in the back of the flap for ink and lightholders. "When closed the "folding flap fits against the compartments and between "the uprights, and a flap is brought over the top and "secured in a lock or catch on the outside of the folding "flap."

[Printed, 4*d*. No Drawings.]

A.D. 1862, October 25.—N° 2876.

NICHOLSON, JOSEPH ALFRED.—"Improvements in lead, "crayon, and other pencils." These improvements consist in forming grooves, longitudinally or otherwise, from end to end in the woody portion of lead or chalk pencils in order to render them more easily pointed. The wood is grooved with several angular grooves by means of rotating cutters, or saws, or drills, or by planing, ploughing, or otherwise. For grooving crayons, slate, and other pencils which are not enveloped in a wooden case the superfluous substance is removed by cutters or drills revolving at a rapid rate, whereas ordinary lead pencils are most readily grooved by forcing them through a die having a series of cutters "which plough, plane, or scoop out the several grooves simul-"taneously." In the Specification is given a detailed description of the apparatus by which the operation is performed; but as the patentee claims as his invention only "forming pencils with "grooves throughout their length, in order to have less material "in the pencil, but with the same or nearly the same diameter "as heretofore," it is deemed unnecessary to describe it here.

[Printed, 8*d*. Drawing.]

A.D. 1862, November 20.—N° 3122.

SEELEY, ROBERT BENTON.—(*Provisional protection only.*)—The ink vessel is in the shape "of a nautilus shell or other shell "of the cephalopoda class;" it may be made of any material, and in some cases the patentee uses shells for the outer vessel. It is mounted on axes, which turn in bearings fixed on a stand. The dipping cup is placed in the mouth of this shell-shaped vessel, *and the* ink flows forward or backward by turning the vessel on *its axes. The dipping* cup is lined with india-rubber or other soft

substance, that the pen points may not be injured, should they be dipped too deep. In combination with the above is a frame arranged with receptacles for a piece of sponge, a taper, sealing wax, matches, and a rubbing surface.

[Printed, 4*d*. No Drawings.]

A.D. 1862, November 26.—N° 3171.

PALLING, FRANCIS.—"An improved fountain penholder," consisting of a hollow metallic holder, in which is fitted a conical-shaped metal case; in this case is fixed a vulcanized india-rubber tube, closed at top, and forming an ink reservoir. The nib, which is placed in the case, presses against the lower part of the tube and "in the action of writing causes an intermittent flow of the "ink to the pen." The elastic tube may be provided with a plug or other contrivance for regulating the flow. In a modification of the above, the holder contains the elastic tube tapered at the lower end which rests on the back of the nib. The nib fits in a socket attached to a long rod. In another, the nib acts as a lever, the upper part depressing the elastic tube; a hair may be inserted through the whole length of the tube to conduct the ink to the nib. In a third, which serves as a pocket pen, the arrangement, excepting the socket and rod, is similar to that in the first modification; and a sheath formed with a shoulder is provided to close the mouth of the tube and to lengthen the holder when in use. The elastic tube is charged by dipping the lower end into ink and pressing the upper part with the finger, causing thereby a partial vacuum; for this purpose a slot is cut in the case. In the first modification the rod is pressed against the tube when filling.

[Printed, 8*d*. Drawing.]

A.D. 1862, December 24.—N° 3451.

KNOX, ROBERT.—(*Provisional protection only.*)—"Improve-"ments in the manufacture of metallic pens." By this invention two pens are made from one piece of metal (of any suitable metal or alloy) of about the same size as the ordinary pen, by forming a nib at each end.

[Printed, 4*d*. No Drawings.]

1863.

A.D. 1863, January 27.—N° 240.

GORDON, THOMAS.—(*Provisional protection only.*)—"An im-" proved method of and apparatus for damping and affixing " postage stamps to letters." A water reservoir incased in wood, metal, or any suitable material, forms the base; in this is inserted a cotton with sponge attached, communicating by means of a small tube with a perpendicular square box on the top of the base, where is another box, each elevated by means of small springs so as to form openings for the reception of the letter. The left hand box contains the sponge; it has also a piston working in a sliding cylinder, which when pressed damps the corner of the letter. The right-hand box, which is portable, contains the stamps; and " passing the letter from left to right, and pressing the piston as " aforesaid, fixes the stamp firmly and securely to the letter."

[Printed, 4*d*. No Drawings.]

A.D. 1863, Ferbuary 6.—N° 333.

BLAKELEY, THOMAS, and MEAKES, BENJAMIN.—(*Provisional protection only.*)—"An improved lead and stone pencil " sharpener," consisting of a piece of hard wood with a hole drilled into one side, "conical at one end and parlile at the other;" opposite the conical end is a recess cut in the wood to admit a knife which is made fast by means of a screw. There is a slot in the knife, so that it "can be regulated to cut with the greatest " accuracy, and can be taken out, sharpened, and replaced."

[Printed, 4*d*. No Drawings.]

A.D. 1863, February 19.—N° 455.

PINKNEY, ROBERT.—(*Provisional protection only.*)—"Improve-" ments in the manufacture of metallic pens." The patentee makes his pens of aluminium bronze. He mentions three alloys, one of 5 per cent. of aluminium to 95 of copper, which has a fine gold colour; one of 7½ per cent. of aluminium to 92½ of copper, which has a greenish gold colour; and a third consists of about *10 per cent. of* aluminium to 90 of copper.

[*Printed, 4d. No* Drawings.]

A.D. 1863, February 28.—N° 562.

WEST, BENJAMIN.—(*Provisional protection only.*)—"An improvement or improvements in metallic pens." This invention consists in making each pen double; the blank is so shaped and cut as to form two pens, one at each end.

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 3.—N° 599.

COHEN, BARNET SOLOMON.—"Improvements in apparatus for protecting the points of pencils." The point protector, which is a metal tube, "produced by bending up a strip and butting the edges," slides on the wooden case of the pencil. It may be made in three different ways:—first, by cutting slits in the tube so as to form two spring tongues (inclining inwards), which rest on the conical end of the pencil when the protector is in use; secondly, by corrugating the tube; thirdly, by cutting on the pencil case a screw thread of rapid pitch, and indenting the protector so as to correspond therewith. In the second and third arrangements the tongues are not required.

[Printed, 8*d*. Drawing.]

A.D. 1863, March 13.—N° 682.

LUTWYCHE, CHARLES THOMAS, and LUTWYCHE, ALFRED.—"An improvement or improvements in metallic pens," The pens are manufactured from the alloy called aluminium bronze, and composed of about 92½ parts by weight of copper and 7½ of aluminium. The sheet of alloy, when rolled to about the thickness of $\frac{5}{40}$ of an inch, is annealed, cleansed from any oxide or scale formed during the annealing, and afterwards rolled to the thickness required. The pens may have iridium-osmium points attached to them. The patentees do not confine themselves to the stated proportions, nor to the use of aluminium and bronze alone.

[Printed, 4*d*. No Drawings.]

A.D. 1863, May 9.—N° 1165.

PAGE, JOSEPH, and WAYNE, ALFRED THOMAS.—(*Provisional protection only.*)—"An improvement or improvements in the manufacture of pens." "Our invention," to quote the words

of the patentees, "consists in making pens from aluminium " alloyed with copper, or what is generally termed aluminium " bronze, by which we obtain an incorrodible pen resembling " gold at a low cost."

[Printed. 4*d*. No Drawings.]

A.D. 1863, May 13.—N° 1202.

HOLTHAUSEN, FREDERIC.—(*Provisional protection only.*)—" An improved portable copying press." A screw, furnished with a winch handle, is mounted longitudinally in bearings fixed to the lower side or bottom of a rectangular box, open at one or both ends, and rather larger each way than the book in which the letters are to be copied. The screw carries a nut which slides in a mortise formed in the centre of the bottom of the box. Inside the box is a loose plate of iron or hard wood, provided with a wedge of the same size as the mortise aud fitting into it, the thin edge " being immediately in front of the screw nut when in its " normal position. This wedge is divided longitudinally in the " middle to leave room for the screw." The book is placed between the plate and the top of the box. " A metal plate cover- " ing the mortise is screwed on to the bottom of the box below, " serving as a point of resistance to the screw nut, which rests " on it."

[Printed, 4*d*. No Drawings.]

A.D. 1863, May 25.—N° 1320.

CLARK, WILLIAM.—(*A communication from Bonaventure Tournier.*)—" Improvements in apparatus for ruling paper and other " materials, either alone or in combination with typographical or " lithographical printing." By the aid of this invention ruling and printing may be performed " in one and the same operation." The machinery required comprises the following parts:—1, an iron shaft turning freely in bearings carried by a cross bar; 2, circular metal discs for ruling mounted on the shaft, " each " furnished with india-rubber packing " to allow of their adjustment " to suit any obstacle which may be met with from any " cause;" 3, metal collars for regulating the space between the discs; 4, a cylinder on which the paper to be ruled is wound, and *to which (as* well as to the " ruling apparatus properly so called ") *motion is transmitted* by a strap and friction rollers; 5, a wood

inking cylinder "capable of adjustment nearer or further from " the centre of the apparatus;" 6, a smaller wood cylinder rotating on its axis in contact with the inking cylinder "for the purpose " of spreading the ink or color uniformly" thereon; 7, a gelatine roller turning freely on its axis for supplying the ink or color from the inking cylinder to the discs; 8, mechanism "consisting " of a bearing carrying two cranks furnished with spiral springs" for bringing the discs and gelatine roller "alternately in contact" with the inking and the paper cylinder; 9, a regulator "formed " of two parts superposed and arranged in such manner that " their position may be regulated by means of two thumbscrews" for the purpose of placing the discs in or out of contact with the inking cylinder; and 10, pulleys for transmitting motion to the inking cylinder. In the drawing a point is marked, "at which is " placed the sheet of paper to be ruled in connection with the " form of type." The invention may be applied to ruling "registers, music, or account papers, bill or ordinary paper."

[Printed, 1s. Drawings.]

A.D. 1863, May 29.—N° 1354.

GREEN, WILLIAM.—"Improvements in the means or method " of producing black coloring matters or pigments." The patentee claims as his invention, first, "the production of black " pigments by the precipitation of the coloring matter of myra- " bolanes, galls, logwood, tannin, and such other materials as are " used in the manufacture of black writing inks and in dyeing " black in conjunction with the mordants that are used for such " purpose, and the application of such pigments, when dried, to " the purposes for which smoke, vegetable, and such blacks are " capable of being used either alone or in admixture with the " blacks of commerce." Secondly, the precipitation of the said pigments upon or in conjunction with a basis for the production of soft blacks, and the use of the base when simply stained with these coloring matters as a black pigment. Thirdly, the use of the pigments as water colours, in which case they are only partially dried, "or they may be mixed in their damp state with size or other " suitable vehicle, and dried for use as crayons, or as solid ink in " lieu of black lead." The process is as follows:—An extract or solution is made by boiling the coloring matters; it is then put into

a vessel and allowed to stand until quite clear; "the mordant to "be used is also, when a soluble one, dissolved in water and left "to clear itself; the two are then drawn off and mixed in another "vessel; when the color has subsided, the mother liquor is "drawn off, which is replaced by clean water; the color is allowed "again to subside, and the liquor is drawn off as before, and this "process repeated if necessary; the color is then placed on filters, "and allowed to drain; it is then removed to the drying or "heated room where all remaining moisture is driven off, in "which state it is ready for use, or it may be crushed or ground "into powder, sifted, and so produced in the shape of dust." He generally precipitates on a basis of china, clay, or carbonate of lead, or such a basis as will of itself form a black with logwood, gallic acid, or tannin, or such chemicals as do of themselves deposit a soft basis or strike a black with some of the dye stuffs, or the blacks of commerce. He sometimes mixes two of the dye stuffs, and sometimes uses more than one mordant. He cannot give any set proportions; he gives, however, three examples; "one a method of using logwood, one of cutch or tanning "matter, and one of galls or matters containing gallic acid."

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 2.—N° 1380.

LÉTANG, EDME HENRY.—(*Provisional protection only.*)—"An "improved ruling and printing machine, to be used either com-"bined or separately." The machine consists of, 1, "a shaft "provided with a series of rundles and circular spaces of brass "and type metal cast on the points, and having a hole in the "centre so as to allow the introduction of the shaft on which "they are placed, and also the proper dimension to be given to "the ruling or lines;" 2, "an inking apparatus composed of "several rollers or cylinders of gelatine and iron, with an "alternate circular motion on an arbor with double cross furrows "or threads, said rollers being inked by means of a semicircular "reservoir pressing the last cylinder by means of a regulating "screw." This inking apparatus may be applied to "all machines "with an engraved relief or sunk cylinder for printing either "fabrics, paper hangings, fancy paper, paper sheets, and envelope "paper."

[*Printed*, 4*d*. No Drawings.]

A.D. 1863, June 3.—N° 1392.

MAURICE, JOSEPH.—(*Provisional protection only.*)—"Improve-"ments in rulers or instruments for ruling, and in the mode of "constructing them." Each end of a perfect cylinder of lignum vitae, ebony, or other wood, or of other substance, is reduced to form a pin on which the cylinder can turn freely in suitable plates; or a rod, secured at each end in an end piece, may be passed through a hole bored along the axis of the cylinder. Both cylinder and end pieces are placed in a frame of wood or metal, in which they can revolve freely. One or both edges of the frame form a bar against which the ruling instrument is pressed and guided. Or the cylinder may be fitted between two end pieces of a ruling frame, having a finger piece or means of moving the ruling apparatus backward and forward. To gauge the distance apart of the lines to be drawn, a hole is drilled at one or both ends of the frame for the reception of a gauge, which is a pin whereon a short metal or other tube or ferrule is made to slide; this tube is graduated with grooves or rings turned in it. Several tubes differently graduated may fit the same pin, or there may be several pins differently graduated. A scale of divisions of length, tables of weights and measures, &c. may be engraved on the frame or fixed thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 8.—N° 1418.

FRIEDERICH, GUSTAV WILHELM EDUARD.—"The manu-"facture of a new ink." This ink defies the action of any acid or chemical preparation to remove it from the surface of the paper or parchment on which it is written, and shews by change of colour any attempt to efface it; it neither corrodes the pen nor leaves any sediment in the ink vessel. The following is the process of manufacturing one gallon thereof, but the patentee does not confine himself to the precise quantities of the ingredients:—"Take six "quarts of boiling water, and while in that state, add of logwood "two pounds (avoirdupois weight), and allow it to boil until "reduced to one gallon of liquor; take of bichromate of potash "three drachms twelve grains, and ferro-cyanide of potash one "drachm thirty-six grains (troy weight), previously dissolved in

" sufficient water, and mix the whole together, then boil up, and " when cool strain carefully through flannel, and the ink is then " fit for use."

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 16.—N° 1512.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Joseph Jules Anthoine and François Etienne Hyppolite Brossette.*) —" Improvements in protecting or preserving the silvering or " quicking on glass and in the manufacture of glass vessels for " silvering or quicking." Inkstands are named among the vessels to which this invention is applicable; such as are of the ordinary construction are silvered on the inside, and on the silvering is applied " a coating of gutta percha or caoutchouc " dissolved in turpentine rectified and filtered, and of the con- " sistence of varnish." As soon as the coating is dry, there is poured into the vessel " a composition of plaster tempered with " water or portland cement," and the vessel is turned to allow the excess to run off; when the plaster is dry, " a coat of strong " gum water " is laid on. Or on the solution of gutta percha (when dry) is applied " an artificial enamel composed of fine " plaster and gum water; " this is coated with " silicate of potash " mixed with sulphate of baryta," or with " glue mixed with " oxide of zinc," and when the coating is dry, with " a solution " of chloride of zinc obtained from zinc shavings dissolved in " hydrochloric acid as much as it can dissolve." Finally there is added a " coat of wax dissolved in turpentine to prevent the " metallic enamel from coming in contact with and thickening " the ink." Another composition which may be poured on to the silvering is made of " gum lac and resin dissolved in amylic " alcohol or in alcohol of commerce marking 40°, in or about " the proportion of 7 parts by weight of alcohol to 1 part of " resin and 2 parts of gum lac." After the excess has been poured out, the vessel is placed for about an hour in a stove heated to about 120° Fahrenheit, " when the varnish wil acquire " the hardness of enamel," and to render it still more durable " it may receive a coating of paint composed of red lead and red " ochre mixed in linseed oil with some essence." An improved *inkstand consists* of an outer and " an inner containing vessel,"

and the portions silvered are the inner face of the outer and the outer face of the inner vessel. If the outer vessel is "closed at "bottom," either there is a small hole left through which the silvering, &c. is introduced, or an entire bottom is added consisting of a plate united by cement. Or the two vessels are blown separately and joined at top by cement; the junction is concealed by a piece of metal which may be hinged to the cover. The vessels may be decorated with "paint or varnish of any "desired colour" applied "under heat to the inner surface."

[Printed, 8*d*. Drawing.]

A.D. 1863, June 29.—N° 1622.

HICKS, LUCIEN EZRA.—(*Provisional protection only.*)—"An "improvement in inkstands." The ink reservoir is of glass or other material; its top is nearly flat and has a hole in the centre. A diaphragm rests on the top, secured by the edge of a hollow metal cap, through the middle of which the pipe of the dipping cup "passes and sets within an india-rubber cylinder" fixed to the centre of the diaphragm. The pipe descends into the ink and terminates with an elastic tube having holes through the side. Within the cap is a lever with a fork at one end, which "takes a thimble around the said rubber cylinder." A key at the other end, when pressed upon, causes the lever to lift pipe, cylinder, and thimble, to extend the diaphragm, and to admit air into the reservoir, the contraction of the diaphragm, when relieved from pressure, causing the air to force ink up into the cup. "A small tube of rubber, formed with an opening through "the said diaphragm when lifted, lets the air out of the reservoir, "and the ink finds its level; this tube forms an air valve, and is "ordinarily kept closed air-tight by a spring around the tube "acting between the metal cap and the surface of the dia-"phragm."

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 13.—N° 1743.

DWYER, ROBERT DOYNE.—(*Provisional protection only.*)—"Improvements in the construction of letter copying presses." Two plates of metal or other material, hollowed out, or formed with recesses on their inner surface to contain the letter book, damping brush, and other necessary appurtenances, are hinged on

otherwise jointed together on one side. On the opposite side mechanical means are attached for bringing the plates near enough to each other to give the required pressure. A very simple arrangement for this purpose is to joint a hooked lever to the edge or side of one plate, and to fasten a stud on the edge or side of the other plate.

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 20.—N° 1819.

GOOLD, JOSEPH.—(*Provisional protection only.*)—"Improve-"ments in the manufacture of ink." This ink is made by submitting "a gallate or tannate of an alkali" to the action of metallic iron; by this process an intensely black solution is obtained, which may at once be used for writing; or it may be evaporated to dryness, and the salt re-dissolved when required for use. An infusion of logwood in solution of common soda may be substituted for the gallate of alkali, and the salts of iron for the metal.

[Printed, 4*d*. No Drawings.]

A.D. 1863, August 6.—N° 1945.

QUELLE, EUGÈNE EHRENFRIED.—"Improvements in ink-"stands." The inkholder and dipping cup are of porcelain, "bronze, or other material; the former is fitted with a collar at each end—or inkholder and collars may be made in one piece. It is supported by pins or screws (about which it is free to oscillate), which pass through standards fixed to a base plate, and united at top by a cross plate. One portion of the cross plate projects and forms the cover of the dipping cup. From the collars arms extend backwards, which terminate in forks for the reception of a penholder or pencil; the arms are strengthened by a stay. The inkholder is so truly balanced that, when the penholder is resting in the forks, the top of the cup abuts against the under side of the projection; and, when it is removed, the inkholder revolves until the dipping cup is arrested by the base plate.

[Printed, 8*d*. Drawing.]

A.D. 1863, August 18.—N° 2054.

FAURE, JEAN BAPTISTE VINCENT.—(*Provisional protection only.*)—"Improvements in pen and ink holders." The holder is

hollow, and by preference enlarged at top for the easier pouring in of ink; the top is closed by a stopper which serves as a seal. The holder is closed at bottom, except to a small tube, which extends over the back of the pen, and is shut, when not in use, by a pin which passes up it; under the tube is an ordinary clip in which the nib is inserted. The tube, pin, and nib are covered by a cap which fits on to the bottom of the holder.

[Printed, 4*d*. No Drawings.]

A.D. 1863, September 9.—N° 2227.

MAGGS, JACOB.—(*Provisional protection only.*)—"An improved "construction of fountain pen." The holder is hollow and therein is inserted a flexible tube of india-rubber or gutta percha, closed at its upper end and connected with a short spiral tube which forms its mouth. The pen is fitted to the holder by a clip or otherwise. The spiral end of the tube extends to near the nibs of the pen; and a slight pressure of the thumb or fingers on the tube during the act of writing will ensure the requisite down flow of the ink. The penholder is filled by atmospheric pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1863, October 2.—N° 2417.

GEDGE, WILLIAM EDWARD.—(*A communication from Jean Marie Laurent.*)—(*Provisional protection only.*)—"An improved "penholder and feeder." The holder is a cylindrical ink tube; round it near its centre is a collar, on which a lever hinges running lengthwise. The upper extremity of the lever carries a valve, which closes a corresponding hole in the tube, thus serving as an air-hole; the lower extremity is provided with a plate, on which the thumb or finger (according to the position of the plate) of the writer rests; pressure thereon causes the hole to open and permits the ink to feed the pen. "Fusible metal is run into and "closes the lower end of the tube or holder, with the exception "of a small hole made in the metal for the passage of ink to a "flexible brush, the bristles or hairs of which are held captive in "the plug of fusible metal, and which is constantly in contact "with the pen." The top of the tube is closed by a stopper, which is removed when a fresh supply of ink is required.

[Printed, 4*d*. No Drawings.]

A.D. 1863, October 23.—N° 2613.

BOYLE, MARY ANNE.—"Improvements in portable writing "cases and despatch boxes." This writing case is composed of a rectangular case covered with leather, cloth, or otherwise; an arched top with handle and lock; and a folding flap hinged to the case. The contents are a writing slope opening with hinges; an ink and pen tray (with semi-concentric ends) raised or lowered by the action of the flap "through the medium of guide motion "grooves," aided by a spiral or other spring underneath and a scroll projection attached to the flap; a frame for stationery; secret drawers; a secret partition for portfolio; hinged end openings for disclosing drawers and partition; an almanac with recesses behind; drawers; a moveable inner end lining covering the secret openings; pin studs for holding and securing the flap to the sides when closed, and reception holes for the studs. The frame may be made to rise and fall by springs and catches; a single leaf may be substituted for the extending portion of the flap, and a double-action hinge to the portfolio for the side opening. In constructing smaller cases, the patentee dispenses with "the "secret portfolio recess, the arched top or cover, and the rising "pen tray, substituting in lieu thereof a secret drawer placed in "the lower part of the case approached by a rising spring "movement."

[Printed, 8*d*. Drawing.]

A.D. 1863, October 31.—N° 2704.

BROWN, JOHN HARCOURT.—"Improvements in fastening and "securing envelopes, letters, dispatches, parcels, packages, and "other similar articles." The fastening consists of a folding piece of thin metal or other suitable material, cut, stamped, or otherwise formed, of any shape, and with two, three, or four limbs, according to the purpose required; two opposite ends are provided each with a nipple, so that on being brought together a blow or pressure fastens them securely. For an envelope two limbs are required, which are passed through slits in the flaps; the upper is placed over the lower, and the nipples are rivetted by a slight blow. For a registered letter a four limbed band is used, having nipples at the ends of two, and holes at the ends of the *other two*. A package label has two limbs, one sufficiently large

for the name, address, &c.; before rivetting the nipples, a string or wire is placed in the fold of the limbs; to hold a card the opposite sides of the larger limb are turned up into grooves, and the card is slid in at the open end; the card is perforated so as to be secured between the nipples; or, when it is inserted, the open end of the limb is turned up over it. For a label the nipple of one limb is passed through a hole in a piece of paper, parchment, &c., the other limb is bent over, and the nipples are rivetted. For a game label the limbs are made long enough to pass round the legs or other part of the game, and the label is held between the nipples. For a despatch box slots are cut in the lid and body; the end of each limb passes through a slot and is bent down on the inside, or the ends may be fastened to staples or studs; the nipples are rivetted over the keyhole, or in any other position. For a bottle or jar the fastener is made with either three or four limbs, two passing round the neck, the other or others over the top. The ends or seams of any material may be joined by two limbs having corresponding nipples, the under ones passing through holes in the ends or seams. To fasten a bag or sack the mouth is first tied; a piece of string or wire is inserted between the mouth and cord, and the ends being threaded through holes in the sides of the nipple, both are closed together. In all the above one or both limbs may have an enlargement thereon for a device, trade mark, &c.

[Printed, 8*d*. Drawing.]

A.D. 1863, November 21.—N° 2928.

WRIGHT, CHARLES EDWARD.—(*Provisional protection only.*)—"Improvements in apparatus for clipping or binding together "letters, music, and other loose sheets." This invention consists in the combination of three parallel bars, two being connected and stretched at a distance from each other by two or more wire stretchers placed at their ends, and further apart than the length of the papers to be held; the third bar, in the same plane and between the other two, slides on the stretchers. In one of the fixed bars are sharpened pins, of less length than the distance between the bars by rather more than the substance of the sliding bar. Loose sheets are held by drawing the sliding bar off the pins, thrusting the points through the edges, and pushing the sliding bar back on them. This holder may be used alone, or

fixed inside a covering of stiff or soft material. Instead of the stretchers being between the bars at the ends, they may be distributed throughout the length, " and form a sort of back against " which the edges of the papers are placed while being fixed on " the pins." For convenience of moving the sliding bar by hand, it is made somewhat larger than the others and projecting at one end.

[Printed, 4*d*. No Drawings.]

A.D. 1863, December 2.—N° 3021.

MACFARLANE, GEORGE.—" Improved ink regulator and indi- " cator." The invention claimed is the application to ink bottles of an adjustable dipping cup, having one or more openings at bottom to admit of the ink rising in it to any desired height. The cup is mounted on a vertical rod attached to a horizontal arm, which is set in a hollow arm and adjusted at any length by a set screw. The hollow arm has at its other end a socket set loosely on a screw pillar, upon which it is worked up and down by a milled edge screw nut. The pillar is mounted on a stand, or it may be screwed to a desk, table, &c. In another arrangement, the arm to which the cup is attached is shortened, bent at right angles, and has at its other end a female screw working on the pillar, which is set in a step on the rim of the ink bottle. The pillar has a milled head, by turning which the female screw moves up and down. The rim is fastened by a thumbscrew; in large bottles it may be provided with a barrel for the cup to slide on, " for the purpose of preventing a space being left between the " dipping cup and ink bottle." The pillar may be made to carry several arms and their dipping cups, " by which several writers " may be accommodated with cups from the same pillar." Some slight modifications of the various parts are described in the Specification.

[Printed, 10*d*. Drawing.]

A.D. 1863, December 7.—N° 3071.

TURNOR, MICHAEL.—" Improvements in pencil cases and " holders for crayons and other marking, writing, or drawing " materials, and in boxes for holding leads for pencils, crayons, " and other articles." The object of this invention is to prevent *the lead, &c.,* from being forced back into the holder by the pressure used in writing. The tube in which the propeller slides is

open jointed, and beside the slot is a rack with parallel slides. Attached to the propeller is a bent spring, on the front of which is a projecting stud which moves in the slot, and below the stud a serrated tooth which engages with the rack. The rack may be serrated and turned inwards at right angles, and the tooth rectangular. Or the teeth of the rack may be in the same plane as the slot, and the top of the propeller a piece of metal bent or doubled and split so that one part may move in the slot while the other engages with the rack. Or a rack may be formed by corrugating the tube on one or each side of the slot, and in the latter case, increasing the breadth of the tooth. The nozzle is provided with a lozenge shaped opening for the ready removal of the lead end. Any of the arrangements may be covered with an outer case, when there must be an additional fixed tube. The sliding tube has an upper tooth and stud, engaging, when "the "action" is moved out of the case, with a transverse slot or rack cut in the fixed tube and case. Both studs work in a longitudinal slot in both tubes and case. The action carries at bottom a stop to limit the distance of its moving. "Instead of preventing the "return of the action into the case, by the slide engaging with a "transverse slot or rack near the middle of the case, the same "object may be attained by the slide being made to engage with "a transverse slot near the bottom of the case, or by a rotary "collar engaging with the slide, and preventing its motion in the "longitudinal slot." The boxes are made from two metal blanks; the one forming the body is bent into the figure of a shallow rectangular tray with a projection on one of its shorter sides; the lid is of nearly the same shape as the body, except that its ends are open, and its lower edges are bent into a plane parallel with the middle part. The lid slides on the body, the bent edges engaging under the bottom thereof.

[Printed, 1s. 4d. Drawings.]

1864.

A.D. 1864, January 2.—N° 6.

MUIR, WILLIAM.—"Improvements in letter-copying presses, "and in the machinery employed in manufacturing the same."

The machinery for bending the beam is of the following description:—On a foundation plate is fixed a block, having in it a groove corresponding in shape to the interior of the beam when bent. In a line with the centre of the block is a holding screw, passing through a screwed block and having its end fitting into a holding block. At each side of the block is a slot through the plate, in which nuts are moved to and fro by screws; the screws turn simultaneously by wheels and an intermediate pinion. On each nut is cast, forged, or fixed a stud, whereon a swivel block is mounted, one edge of each block having a recess to fit the beam. The beam is forged of wrought iron and turned; the end screws are cut in a lathe or otherwise, and the centre hole is bored; it is then heated and secured between the block and holding block; the swivel blocks are brought into contact with its ends; the screws are turned by the pinion until it is gradually compressed into the groove. In a modification, there is a block or mould (with a recess of the shape of the outer portion of the beam) which is laid on or fixed to the anvil of a steam hammer. Above the mould is a block (with a recess corresponding to the inner shape of the beam), either fastened to the piston rod of the hammer or loose and guided in slides; a pin fixed to the block fits in the eye of the beam to keep it lengthwise in the centre of the mould. The beam is made red hot and laid on the mould, and the block is gradually brought down on it; or the block may be forced down by hydraulic or other pressure. For the foundation plate a block is made with a recess of the required shape and depth; a lump of iron, roughed out by rolling or otherwise and heated, is driven into the recess by blows of a steam hammer or by pressure. The projecting edges are removed, the surface is planed, and holes are drilled for the ends of the beam. The platen, screw, and handle are made in the usual manner. The plate is supported on cast or wrought iron feet forged on the underside by making the recesses of suitable shape.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1864, February 4.—N° 291.

GARDNER, HENRY.—(*Provisional protection only.*)—"Improved "arrangements for writing or marking instruments." This invention, a fountain penholder, consists of a hollow cylindrical case *with a piston* and rod, the end of which protrudes beyond the *top of the case.* Around the rod is a coiled spring fixed against

the inside of the case top. The lower end of the case is provided with a mouth piece or discharge tube and with a socket for a pen nib; or the nib may be fixed to the socket. When the case is charged with ink by immersing the mouth piece and drawing up the piston, a supply will be furnished to the nib by pressing down the piston acted on by the spring. The piston rod may be covered with a cylindrical case moveable with the rod.

[Printed, 4*d*. No Drawings.]

A.D. 1864, February 24.—N° 466.

WHITTENBURY, JAMES CALEB, and WHITTENBURY, JAMES CALEB, junior.—(*Provisional protection only.*)—"An "improved convertible desk, church seat, and table." This article stands on two bases or feet, each having raised from it two uprights, the one shorter than the other. The shorter uprights (one from each foot) support a fixed seat, while the higher ones support a broad board suitable for a desk, which is hinged to them on the under side, so that it may oscillate thereon and assume a horizontal position for a table, a slope for a desk, or a nearly upright position for a back of a seat. On the under side of the desk is hinged a book rest (for the seat immediately behind). The desk has "two quadrants affixed to it working on "the top supports, by which quadrants it can be fixed in the "different positions mentioned, or in other positions if desired." To adapt the article more particularly for a school ink vessels are sunk into the desk and mounted on pivots; and spring covers are applied over the recesses containing the vessels.

[Printed, 4*d*. No Drawings.]

A.D. 1864, March 16.—N° 676.

LAVERTY, JAMES.—"Improvements in pens." In these pens, whether of metal or other suitable material, "the lower part of the "stem is bent or cranked outwards, and to the right of the point "where the nibs come to the paper when writing. The body of "the pen (which is hollow on its under side and convex on its "upper surface) projects towards the left hand of the writer, and "the outermost end of the split commences where the points "touch the paper, and proceeds from that point towards the "right, and terminates in the body of the pen."

[Printed, 6*d*. Drawing.]

A.D. 1864, April 21.—N° 997.

CLARK, WILLIAM.—(*A communication from Madame Adrien Maurin and Gustave Toiray.*)—"Improvements in pens." The object of this invention is to enable pen nibs of any material to be more readily fitted to any kind of holder, and also to prevent the points from becoming contracted. For this purpose a slit of T form is made in that part which enters the holder. The slit may be of a straight, T, or other shape, and more than one may be made if necessary.

[Printed, 6*d*. Drawing.]

A.D. 1864, June 25.—N° 1600.

JENKINS, HENRY, JENKINS, JAMES, JENKINS, FREDRICK, and JENKINS, SAMUEL.—(*Provisional protection only.*)—"Improvements in metallic clips for permanently or temporarily binding or holding together manuscripts, papers, pamphlets, or for other like purposes." A piece, somewhat in the form of a T, is cut from flat sheet metal. The shank is divided "vertically through the middle, so that by bending this part at right angles with the top the clip is fit for use." The shank and the head may be made of two pieces of metal and united in various ways. Again, the metal may be cut into such a shape that the shanks project at right angles; these are afterwards bent to form with the head a T shape.

[Printed, 4*d*. No Drawings.]

A.D. 1864, July 7.—N° 1685.

MURRAY, GERALD.—(*Provisional protection only.*)—"An improved apparatus for writing." By the use of this instrument the pen is kept in its true position, the hand is supported, and the fingers touch neither pen nor holder during the act of writing. It consists of a hollow piece of metal or other material to be passed over two fingers, with a place indicated for each. To the left is fixed a cylinder for the reception of the penholder.

[Printed, 6*d*. Drawing.]

A.D. 1864, July 12.—N° 1733.

TOMLINSON, JOHN, and BRASSINGTON, THOMAS.—"Improvements in securing envelopes, cases, covers, or wrappers."

The patentees describe only their method of securing envelopes, the same being applicable to cases, covers, and wrappers. The part of each flap to be fastened is strengthened by a piece of linen or other suitable substance, gummed or glued to the inner side thereof. Two slits are cut in the upper flap, through which is passed a thin piece of metal, somewhat larger at the upper than at the lower end. This piece has three tongues, the upper one lies on the linen, the middle one is turned down thereon, and the narrow end and third tongue, being slipped through a slit in the lower flap, will prevent the piece from being withdrawn until the envelope is destroyed. In all the modifications described in the Specification the lower flap has also a thin strip of metal introduced between the paper and linen; and as the only difference between them and the above description consists in the mode of attaching the pieces to the flaps, all being secured by a tongue or tongues (in one "a spring, pointed pin, or cotter" is used instead of the metal pieces), it is unnecessary to detail them here.

[Printed, 10*d*. Drawing.]

A.D. 1864, July 22.—N° 1828.

MÖLLER, JOHANNES.—(*Provisional protection only.*)—"Improvements in the manufacture of marking ink." This red ink is compounded of the following ingredients:—The purest red and fast coloring principle of madder root, with which cochineal, magenta, or carmine may be mixed in small proportions (from one part in four to one part in eight); alcohol, about half a drachm to the fluid ounce of colour, a few drops of sulphuric ether, a little common salt, and a small quantity of gum or sugar water. A small quantity of alum is mixed in the colour, or a weak solution is "applied to the material before the color is used."

[Printed, 4*d*. No Drawings.]

A.D. 1864, August 2.—N° 1914.

DAVIS, HENRY THOMAS.—Improvements in apparatus for affixing postage stamps and other labels to letters and documents, and for registering or indicating the number of such stamps or labels used. The apparatus is constructed as follows:—On the bottom of an outer case of brass, or other metal or material, is screwed or otherwise fixed a metal plate supporting a pedestal of wood or

metal, round which is a coiled spring. Inside the front of the case, near the top, is a roller mounted on an axle running through openings in the sides. The ends of the axle are fitted with tightening nuts and screws. On one end of the roller is a ratchet into which a pawl takes. In the lower part of the case is a corresponding roller, but without a ratchet. On the rollers is an endless band, on which is printed or written a consecutive number of figures visible through an opening in the case. An inner case is divided longitudinally into two parts; the larger one, of the same size as the labels, has slots at each end to admit air; it fits the pedestal exactly; the smaller part, closed at bottom, has at the top a damping roller of flannel, sponge, or other absorbent; it is kept supplied with water or mucilage into which the damper dips. The inner case has at the lower outside edge flanges and stops to prevent it from being thrust out of the outer case by the spring; over it is a lid, bevil fronted, and having a spring or other hinge at one end and a knob on the top. The letter or document is passed over the damper and under the lid; the inner case is pressed down by means of the knob until the letter comes in contact with the uppermost label in the larger part. The inner case, in its upward motion after the pressure is removed, acts on the pawl and causes it to turn one tooth; the band is thereby moved so as to present another number at the opening.

[Printed, 8*d*. Drawing.]

A.D. 1864, September 9.—N° 2200.

CLARK, WILLIAM. — (*A communication from Claude Marie Bathias and Pierre Théodore Notin.*)—(*Provisional protection only.*) —"Improvements in apparatus for damping paper used in copy-"ing letters and other papers." This invention relates to an improved damping roller, which is covered with leather or any suitable fabric, and furnished with a handle and frame. This roller absorbs a certain amount of water, and, having been previously damped by passing it over a wet pad, is rolled over the whole surface of the paper. The whole is enclosed in a box.

[Printed, 4*d*. No Drawings.]

A.D. 1864, September 12.—N° 2223.

BAILDON, HENRY CRAVEN.—"Improvements in the manufac-"*ture of inks* or writing fluids to be used with certain kinds of

" paper for the prevention of fraudulent alterations in bankers' " draughts, notes, cheques, and other documents." The ink is composed of " diluted sulphuric acid, made according to the " British Pharmacopœia, and indigo paste as a coloring matter, " in the proportions of a quarter of an ounce of indigo paste to " three-quarters of an ounce of diluted sulphuric acid." The patentee prefers " adding to the indigo paste a small proportion of " magenta crystals or other aniline coloring matter." The proportions of acid and coloring matter may be varied to suit different kinds of paper, and other acids besides sulphuric acid may be employed. The paper intended to be used is blue tinted paper, or paper tinted or colored with any matter which will be acted upon by the acid " so as to discharge and change the colour at the " back of the paper and weaken the texture." The paper preferred is one tinted or colored with ultramarine, but paper colored green, or otherwise colored, may be used.

[Printed, 4*d*. No Drawings.]

A.D. 1864, October 11.—N° 2506.

NEWTON, WILLIAM EDWARD.—(*A communication from Josiah Vincent Lavers.*)—(*Provisional protection only.*)—" Improvements " in the manufacture of ink." An infusion of bruised Aleppo galls, and a proper proportion of sulphate of iron, gum arabic, and cloves, are combined with an aqueous extract, and the mixture is submitted, drop by drop, to the action of the air. The proportions in which the several ingredients may be employed admit of great variation. The patentee gives the following for 150 gallons :—" 120 lbs. of " bruised Aleppo galls should be placed in a suitable open vessel " and covered with cold water, in which they should be macerated " for about 14 days. A sufficient quantity of boiling water to " make the required quantity of liquid is then added, with 50 lbs. " of green sulphate of iron, 50 lbs. of gum arabic, and about " 12 lbs. of cloves." When the ingredients have been allowed to stand until the sulphate and gum are dissolved, the mixture is poured into vessels having perforated bottoms, the holes of which are filled with cotton wick or threads about a foot long, which hang down therefrom. The liquid passes through the perforations and down the threads; it is thus filtered, and during the process " becomes exposed in minute subdivision to the action of " the air, which fixes the colour."

[Printed, 4*d*. No Drawings.]

A.D. 1864, October 12.—N° 2511.

MÖLLER, JOHANNES.—" Improvements in the preparation or " manufacture of coloring matter for marking ink and other " purposes." This invention has for its object to produce a fast red writing and marking ink, and a coloring matter suitable for dyeing a red colour, and requiring only one mordant. The chief ingredient is alizarine, derived from madder root or garancine by the known processes. When the alizarine is perfectly free from acid it is mixed (if moist) or ground (if dry) with either the cyanide of potassium or caustic potash, the proportions being from 3 to 5 drachms of the former, and $1\frac{1}{2}$ to $2\frac{1}{2}$ drachms of the latter, for the fluid pound of colour. To produce crimson about 4 grains of white bismuth are ground therewith. For marking ink from one half to one drachm of carmine or green alizarine free from acid, 2 drachms of alcohol, and $2\frac{1}{2}$ drachms of thin flour paste are added to the fluid pound of colour prepared as above. The mordant is produced by dissolving half a pound of Roman or Levantine alum in 5 gallons of water, and mixing therewith 1 pound of common acetic acid. Sumach also may be added.

[Printed, 4*d*. No Drawings.]

A.D. 1864, October 14.—N° 2531.

COOKE, JOHN.—(*Provisional protection only.*)—" Improvements " in catches or fasteners, which may be adapted to portable or " pocket ink bottles or other similar articles." The improvements consist in the use of an additional catch so arranged "as to lock " with that on the ink bottle or box, and thus prevent its be- " coming accidentally opened." The usual aperture made for the reception of the hasp is carried right through the lid of the box, and it is "up and down this opening" that the catch is applied. The catch is raised from the lid by an upward pressure of the thumb, and then the ink bottle can be opened in the usual way by pressing on the hasp. The above arrangement can be applied to purses, portmonnaies, and other similar articles.

[Printed, 4*d*. No Drawings.]

A.D. 1864, November 3.—N° 2722.

BREWER, EDWARD GRIFFITH.—(*A communication from Albert Rittmeyer.*)—" Improvements in inkstands." The inkstand is composed of four principal parts : a base plate or foot, a bottom or

case, an inside cover, and an outside cover. In the centre of the base plate is a spindle (provided with a handle) on which the other parts are mounted. The case contains three ink chambers; it is free to turn on the spindle. The inside cover is immoveable on the spindle by means of a bayonet joint; it has one aperture of the same size as that of each chamber. The outside cover, which surrounds the bottom of the case, has three similar apertures at the top; round it, opposite to each chamber, is a tube for a penholder colored to correspond with the ink with which it is intended to be used. On the side of the case is a pin which fits into a slot in the outside cover, to keep them in their proper position. Small openings are formed on the side of the outside cover to contain sticks for stirring up the ink. A spring or springs may be placed under the case, so that all the parts may be kept tight together. The inkstand can be made of any material, and to contain a larger or smaller number of chambers.

[Printed, 8*d*. Drawing.]

A.D. 1864, November 9.—N° 2780.

DIXON, STEPHEN.—"The construction and arrangement of an "improved letter paper, invoice, or bill book file." This "spring "book file" (of which the patentee describes not fewer than eight different arrangements) is composed of, 1, two covers, which are part of two pieces forming the back of the file, or attached to them by any ordinary method used for binding books; 2, springs of metal or other material placed at the back of the cover, and having their ends passed through slits in the same to the inside thereof; 3, pointed pins rivetted or otherwise secured to one end of each spring; and 4, sockets in the extremities of pins which are fastened to the opposite end of each spring. When a letter or other document is to be placed on the file, a slight pressure on the sides of the back causes the metal points to separate from their sockets. In the specified arrangements the back is not divided, and the modifications consist merely in the different modes of securing the pointed pins.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1864, November 12.—N° 2820.

FISHER, WILLIAM.—(*Provisional protection only.*)—"Appa- "ratus or mechanism for securely closing adhesive envelopes,

"and for affixing stamps to letters and envelopes." In one end of a weighted frameplate is a box open at both ends, and of suitable size for containing stamps. A pair of levers, "working "like a pair of scissors," have their fulcrum secured to a frame mounted on the plate, at such a distance from the box as to admit of a large envelope. The extremity of the lower lever works through a slot in the box, causing a piston to rise and force up the stamps, while the upper one, whose extremity is furnished with a flat portion extending over the top of the box, is pressed down upon the envelope when inserted between them. The levers may be actuated by a disc, rotating on a pivot which is secured to a frame mounted on the plate, and having two studs on opposite sides, so that, when it rotates, one lever is pressed up, and the other pressed down. There are two guides on the flat portion for affixing the stamp in its proper place; there may be a third, in case it is required, to affix an additional stamp. The corner for the stamp, or the lappet of the envelope, is damped by pressing on a damper which is kept wet by capillary attraction or otherwise.

[Printed, 4d. No Drawings.]

A.D. 1864, December 23.—N° 3193.

WHEELER, JOHN FRANCIS.—"Combined portable inkstand, "pen, and pencil holder," such that, "when the under flap is "opened, the case will stand on a table ready for use, and when "the case is shut up it may be suspended as an ornament from "the watch chain or be carried in the pocket." It consists of a metallic case oblong in shape and divided into two parts; one holds the ink bottle, the other the pen or pencil holder, which is made telescope fashion. The cover is made in three divisions; one, hinged to one side of the case, is provided with a leather or india-rubber stopper which fits into the mouth of the ink bottle; to this one is hinged a second division having a pocket for stamps; the third is hinged to the opposite side of the case, and has on it "a monthly indicator of dates."

[Printed, 6d. Drawing.]

1865.

A.D. 1865, January 26.—N° 234.

CLARK, WILLIAM.—(*A communication from Henri Louis Riottot, junior.*)—"Improvements in pencil cases usually termed ever-"pointed pencils." This invention has for its object a mode for the ready removal of the stump of lead "which always remains in "the holder." A grooved tube, in which the lead is placed, has soldered to it a stud "projecting so as to engage in a spiral tube" whose pitch diminishes towards the lower end for three or more turns. A second stud (with a stem received into the lead tube) also engages in the spiral. The lead tube is enclosed in a longer grooved tube through which the studs project "so as to be guided "in a rectilinear direction without turning with the spiral." In the lower end or head of the longer tube is screwed the nose, through which a fresh lead is introduced. A cap is soldered to an outer case, or "screwed thereto when the holder is furnished with "a reserve of leads." To produce the required motion in the pencil case the head of the longer tube is held with one hand, while by the other the case is made to revolve, carrying with it the spiral which is fixed to it or otherwise fitted into it tightly. "The part for forcing up the lead" may be modified by employing only one stud; in this arrangement the spiral has the same twist throughout; it bears at one end on the stud and is secured at the other to the lead tube. When the lead is used up or broken, the lead tube bears against a projection on the interior of the nose, and on continuing the rotation the stem compresses the spiral. The lead may be forced out by furnishing the lead tube with a moveable stem "to be worked with the finger nail."

[Printed, 8*d*. Drawings.]

A.D. 1865, January 31.—N° 268.

GILL, JAMES WILLIAM.—(*Provisional protection only.*)—"Im-"proved clothes fastener," which may also be used as a letter clip. This fastener is composed of two pieces of sheet iron or other metal formed and united as follows:—"each piece is made "square and of equal size on three of its sides, the fourth side of "each being made with a tongue projecting from the middle part

" one-third the length of such side, so as when bent at a certain " angle from the other portion to form the handle." The square portion of each is bent into a semicircular or similar shape, and the two pieces are joined by a hinge, which is made from the part of each handle immediately above the body by cutting out the required portions from each, and secured by a wire bolt. The same process stamps the two sides of the body to the desired shape and bends the handles to the proper angle. A small steel V-shaped spring is rivetted to the upper part of the handles. The fastener may be galvanized, tinned, or otherwise coated.

[Printed, 4*d*. No Drawings.]

A.D. 1865, February 3.—N° 298.

VALE, WILLIAM.—" Improvements in the manufacture of pencil " cases." The object of this invention is to combine a watch key with an ever-pointed pencil case. To the base of the reservoir for containing leads is fixed a plug which screws into the barrel of the case; a continuation of the plug (drilled with a square hole) constitutes the barrel of the key. In order that the key may fit any size of watch the barrel is slit lengthways and formed externally " of a bulged or conical shape;" a cap, having an internal flange and screwed on to a portion of the plug, bears upon the cone and so regulates the size of the hole. If the case be of ivory or bone, the plug is screwed into the upper portion and secured there by a pin. The pencil cases may be furnished with a knife at one end and a pen at the other.

[Printed, 8*d*. Drawing.]

A.D. 1865, February 8.—N° 352.

WILEY, WILLIAM EDWARD.—(*Provisional protection only*.)—" Improvements in pencil holders and penholders, and in holders " for crayons and other marking, writing, or drawing materials," which are provided with sliding propellers. The improvement consists in fixing the propeller in any required position. The slide is carried by a spring on the upper side of the propeller; parallel to the longitudinal slot is a series of holes, and on the top of the spring is a pin which "is made by the elasticity of the spring to enter one or other of the holes," thereby fixing the slide *and propeller* and preventing the marking material from being

pressed back into the holder while in use. The holes may be made on the same side as the slot, or on the side opposite to it, if the pin and spring be arranged accordingly.

[Printed, 4d. No Drawings.]

A.D. 1865, February 10.—N° 379.

HART, HERBERT WILLIAM.—"Improvements in apparatus for "affixing postage and other gummed stamps and labels." The apparatus is composed of a box, plunger, and two springs. The box, of a size and shape suited to contain the labels, has a thin lip or edge "just inside the open bottom and on all its sides." The plunger is surmounted by a spring which keeps it down on the labels; the rod of the plunger reaches to the top of a tube attached to the upper side of the box; the upper part of the rod is surrounded by a spring "capable of being depressed by a knob." The box is charged with labels (gummed side downwards) through a slot in the side; and, when the lowest one is damped by being pressed upon a wet sponge, pressure on the knob forces the label out and affixes it where required.

[Printed, 6d. Drawing.]

A.D. 1865, February 11.—N° 394.

HILL, EDWARD JACOB.—"Improvements in pen and pencil "holders." The penholder is made in two parts; the one which holds the pen is hollow, cylindrical, triangular, or hexagonal, and from one to two inches in length; the other part works telescopic fashion either within or outside of the former; it has soldered to it a loop, hook, or ring, through which the writer's finger passes. This upper part and its loop may be readily applied to ordinary lead pencils, and pencil holders may be constructed in a similar manner.

[Printed, 6d. Drawing.]

A.D. 1865, February 13.—N° 406.

VANNET, FRANCIS CHARLES.—"Improvements in the manu- "facture of penholders." Two or three sides or faces, "more or "less equal and more or less plane," are cut out from the cylindrical or conical rod which is to form the holder, the upper part being "of a smaller diameter than that of the part left between

" for the fingers;" this part may be of any shape. For metallic penholders " an elevation or pitch is made if required to receive " the steel pen."

[Printed, 6*d*. Drawing.]

A.D. 1865, February 22.—N° 495.

RIBTON, HERBERT PANMURE.—(*Provisional protection only.*) —" An improved fastener for envelopes." " It is proposed," says the patentee, " to attach to the under flap of an envelope a " small metal eyelet, a flat metal ring being secured to the outer " flap so as to correspond to and close over the eyelet. This ring " may either be concealed in the paper or placed on the outside " thereof, in which latter case it may be made of an ornamental " character. The closing of the eyelet over the ring may be " effected by means of a pair of pincers, a punch, or small " hammer or mallet."

[Printed, 4*d*. No Drawings.]

A.D. 1865, February 23.—N° 505.

WESTBURY, WILLIAM, and WATHEN, THOMAS.—(*Provisional protection only.*)—" Improved means for holding, attach- " ing, or suspending fancy articles, as exposed in bazaars, shew " rooms, or shop windows for sale, as well as the providing of " means for portably fitting or holding the price ticket to such " articles, a modification of which arrangement is also applicable " for holding and filing papers, or other purposes." A piece of hard drawn wire is suitably bent and fashioned to obtain an elastic and spring force of sufficient strength to retain price tickets; the holder is provided also with the means of suspension. For attachment to woven fabrics one end of the wire is sharpened. For holding watches, &c. a loop is made at the top end for passing over or threading on a cord or wire, " the two ends ter- " minating in close contact one on the other for holding the ticket " between them, while the extreme of one end of the wire may be " fashioned into a hook." For holding papers " a piece of wire, " with a circular or bow springed twist to form a loop for sus- " pension for affording the spring, may have its two ends " fashioned, one with an eye and the other at right angles."

[Printed, 4*d*. No Drawings.]

A.D. 1865, March 17.—N° 746.

WHEELER, CHARLES ANTHONY.—(*Provisional protection only.*) —"An improved apparatus combining a pencil shield and india-"rubber." The shield is a split tube, of any metal, plain or ornamented, open at one end and closed at the other. When the pencil is not in use, the pointed end is thrust into the shield; when in use, the shield is placed on the uncut end. A band of india-rubber surrounds the shield at or near the top of the closed end.

[Printed, 4*d*. No Drawings.]

A.D. 1865, March 24.—N° 836.

NEWTON, WILLIAM EDWARD.—(*A communication from Josiah Vincent Lavers.*)—"Improvements in the manufacture of ink," namely, in the mode of filtering the liquid, so that during the operation it "may become exposed in a state of fine subdivision "to the action of the air." The patentee does not limit himself to the following ingredients or proportions:—To make 150 gallons of ink he proposes to use 120 lbs. of bruised Aleppo galls, which are to be put into an open vessel, covered with cold water, and macerated for about 14 days; he then adds as much boiling water as will make up the required quantity, 50 lbs. of green sulphate of iron, 50 lbs. of gum arabic, and about 12 lbs. of cloves. When the compound has been allowed to stand until the sulphate and gum are dissolved, the liquid is poured into vessels having perforated bottoms, the holes being filled with cotton wick or threads which hang down about a foot in length. The ink is filtered by passing through the holes and down the threads.

[Printed, 4*d*. No Drawings.]

A.D. 1865, April 3.—N° 931.

BÜNGER, WILLIAM.—(*A communication from Frederick Kührmann.*)—(*Provisional protection only.*)—"Improvements in vessels "or apparatus for melting sealing-wax, glue, or other substances." An external vessel, by preference of conical shape, is employed, having a door on one side for introducing a spirit or other lamp; holes for the admission of air are pierced through the lower part, and others near the upper part "for the escape of the heated air "and products of combustion." Upon the upper rim an inner vessel is supported, "consisting of a central chamber partly sur-

" rounded by a conical-shaped jacket, the smaller part being " downwards, thus forming a space between it and the outer " vessel." The wax or other substance of a like nature is placed in the jacket, and, as it melts, it flows through holes formed around the central chamber into the bottom thereof, " the bottom " of the central vessel being, by preference, formed double or with " a space between them to prevent the burning of the wax." For melting glue or similar substances the holes forming a communication between the jacket and central vessel are dispensed with, and water is poured into the jacket.

[Printed, 4*d*. No Drawings.]

A.D. 1865, April 3.—N° 933.

CORBETT, THOMAS, and HARRINGTON, ROBERT.—(*Provisional protection only*).—" Improvements in the manufacture of " letter clips, book markers, paper knives, and clips for suspend- " ing stationery, drapery, and pictures, and for other such like " purposes." The first part of the invention regards " the part " of the clip that carries its fulcrum;" the sides of the lower part are turned up, and the opposite ones turned down, so that, when they are placed face to face, there is a hollow space between them. A pin, forming the joint or fulcrum, is then passed through from side to side. The second part consists in the arrangement of the spring which keeps the clip closed. A coil of wire is placed on the fulcrum in the hollow space, the ends projecting and taking effect, " the one on the tail of the lower, and the other on the tail " of the upper part of the clip." There may be one or more coils, or " only so much of a coil as will answer the purpose, being " somewhat of a U form." This clip by lengthening one of its parts forms a book marker and paper knife combined; and by turning up one end " it will be applicable to the suspension of " pictures and a variety of objects."

[Printed, 4*d*. No Drawings.]

A.D. 1865, April 19.—N° 1089.

MERRITT, JOHN.—(*A communication from Frank Oliver.*)—(*Provisional protection only.*)—" Improvements in inkstands." A diaphragm valve, " flexible, so as to be capable of assuming a " convex or concave form," is fitted into an ink reservoir of *ordinary* construction and provided with the usual dipping cup.

The valve is formed of "a concave convex vulcanized india-rubber "disc in combination with a central knob, the whole being "secured in a suitable metallic or other frame."

[Printed, 4d. No Drawings.]

A.D. 1865, April 24.—N° 1147.

NEWTON, WILLIAM EDWARD.—(*A communication from Auguste Masson and Pierre Hubert Cary.*)—"Improvements in penholders "or cases." The first is an improvement whereby the slot and ring for pushing out the pen, when no longer serviceable, are dispensed with. The penholder is composed of an outer case, a pen retainer, and a pusher. The case is hollowed out at the lower end; the retainer is inside the case and serves as a guide to the pusher which passes between it and the case. The pen is held between the case and the retainer; the latter is secured by a screw pin passing through a slot in the pusher, which is fastened to the handle by an indentation; the handle slides up and down in the case. The second, or "ring penholder," is intended to push out the pen "without soiling the fingers." The handle is fastened to the case, which has in it a slot for guiding the pusher. The retainer forms a spring for holding the pen; it is secured to the case by an indentation, and has in it a slot corresponding to the slot in the case. The pusher is a simple piece of metal with projections which are rivetted into apertures in an outside ring.

[Printed, 10d. Drawing.]

A.D. 1865, May 1.—N° 1216.

WILEY, WILLIAM EDWARD.—"Improvements in ever-pointed "pencils," in which a short tubular holder is employed for projecting the lead, and out of which the last piece of the lead is pushed by a forcing wire. On the holder is a projection which enters a female screw of uniform pitch, and inside is a forcing wire, having at or near its upper end a similar projection which also enters the screw. When the projection on the holder has reached the end of the screw, the forcer by continuing the rotation will drive out the end of the lead. A spring or other contrivance presses on the screw and keeps it "correctly in action." There are certain modifications described. The spring may be omitted and the screw arranged to act as a spring. The effect of the spring may be obtained "by sliding the parts longitudinally a short distance "by hand." The screw may be held while the other parts are

rotated. "What is known as the ratchet or sliding movement "may be arranged to move the forcer and the tubular holder at "like speeds," and then "to have a separate movement of the "forcer." The screw thread and slot may be in the outer case; in this modification the projection on the holder is of some length in order to receive a ring which also carries a projection forming a portion of a screw and entering the thread on the case. When the ring comes to the lower end of the thread, the forcer "is free "to be slid by the finger of the user in order to discharge the last "piece."

[Printed, 8*d*. Drawing.]

A.D. 1865, May 2.—N° 1231.

CATILLON, JULES.—"An improved self-supplying pen." The component parts of this pen and their action are, 1, a tubular handle containing the ink and surmounted by a screw cap; 2, a metallic plug fitted within the lower end of the handle and forming therewith a cavity for the pen; 3, an ink passage through the plug, consisting of a projecting tube having at its lower end a "pin head "valve" opening outwards; 4, a piston working longitudinally within the handle "through the intervention of a reacting spring "and thumb stop movement;" 5, a valve rod acting in connection with the piston and giving motion to the pin head valve; and 6, a thumb stop (which actuates the rod) moving longitudinally through a slot in the handle and a recess in the plug.

[Printed, 8*d*. Drawing.]

A.D. 1865, May 3.—N° 1236.

BEGUIN, MAGLOIRE HONORÉ.—(*Provisional protection only.*)—"Improvements in the manufacture of penholders." The penholder is closed by an ink reservoir, between which and the pen there is a communication by means of a piston provided with a spring. "A stud, set in motion by being pressed by a finger, "determines the movement of the piston and consequently the "feeding of the pen."

[Printed, 4*d*. No Drawings.]

A.D. 1865, May 13.—N° 1339.

COOKE, JOHN FREDERIC.—(*Provisional protection only.*)—"*Improvements* in the manufacture of pocket pencils." These

pencil cases are made to open at or near the middle for the insertion of leads. On the body or upper part, at the point of junction, are a projecting piece having a wedge on one of its sides, a tube for inserting the lead, and a hinge. The lower part revolves on the hinge and fits on to the projections. The parts are sometimes made to join by means of a screw or a bayonet catch.

[Printed, 6*d*. Drawing.]

A.D. 1865, May 16.—N° 1354.

DIXON, HENRY EDWIN.—(*Provisional protection only.*)—"Improvements in letter clips or paper holders," which are intended to be hung against a wall. The base is of wood or millboard; to the upper edge is connected a metal spring flap, extending nearly the whole length, by means of axes working in uprights. Coiled springs upon the axes press the flap forcibly against the base. The flap is raised by means of an arm or thumb plate; it is expanded in the middle (where there is a slot at right angles to the axes) into a broad tongue extending a considerable distance down the base. In the centre line of the base are fixed two pointed wires, "bent towards one another, their pointed ends "nearly touching each other," and protruding through the slot. The flap is fastened back when required by means of a hook. A loose cover hangs down the front to protect papers from dust.

[Printed, 4*d*. No Drawings.]

A.D. 1865, May 27.—N° 1457.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Jacques Paul Lambrigot.*)—"Improvements in reproducing or "producing copies of writings, drawings, music, and other cha-"racters, and in preparing originals to be transmitted by electric "telegraph." A thin sheet of tin and a sheet of ordinary paper are carefully pasted together; when the paste is dry, the tin side is "pressed or glazed on a steel plate, the polished side of which "has been grained," and both are passed between rollers "so "that the tin may be grained identically." The tin surface is bespread with a thin layer of essential oil "capable of resisting "the biting action of acids;" it is wiped dry, and on it is applied "a sheet of white paper which has remained several hours in a

" bath composed of about 100 parts of distilled water, 100 parts " of azotate of ammonia, 2 parts of yellow prussiate of potass, and " 25 parts of dextrine." The sheet is dried with a linen cloth and caused to adhere to the metal "without folds or tears;" the whole is put "in metallic communication with the negative pole " of a voltaic pile, while the positive electrode terminates in a " movable iron needle" by employing which "as an ordinary " pencil," blue marks of the writing, drawing, or other character are obtained "in consequence of the passage of the electric current and the "formation of double cyanide of iron." When the writing, &c. has been traced, the white sheet is separated from the grained tin; "no apparent trace of the characters" is left, and the metal is treated in the following manner "to render visible " the double reproduction of the characters which exist in the " state of oxide." The tin sheet is placed in a frame to keep it straight, and on it is thrown "a decoction of nut galls or other " vegetable acid, into which a few drops of azotic acid have been " previously poured." By degrees there is formed "in relief a " very apparent whitish product, which forms exactly the same " marks as the blue marks on the chemical paper which has been " separated from it." The tin sheet "after being well drained is " placed on a heated semi-cylindrical iron plate, which desic- " cates the nascent product and fixes it to the metal;" and to give greater solidity and fixity to the product, it is submitted "to " a bath composed of soda or ammonia or an alkali and water." To blacken or tint the characters, "it is sufficient to throw over " the sheet a solution of sulphate of iron, or fatty varnish, or even " ordinary ink."

[Printed, 4*d*. No Drawings.]

A.D. 1865, May 30.—N° 1484.

LAWRENCE, Benjamin. — (*A communication from Phineas Lawrence.*) — "An improvement in inkstands." The inkstand consists of a glass or other vessel having a neck at the top and an india-rubber diaphragm for its bottom. A pipe, open at each end, and enlarged at top to form a dipping cup, fits air-tight into the neck, or is made air-tight by an india-rubber packing ring. The diaphragm is secured to the lower edge of the vessel by a *metal* ring formed on a base plate; the ring fixes also a thin *flexible metal* plate under the diaphragm. A rod extends across

the base plate; it is turned by a button, and at the middle is attached to one side of a cylinder which forms a cam, and when turned upwards presses up the diaphragm, thereby forcing ink through the pipe into the cup. A small leather disc for the cam to work against is fastened to the diaphragm. Ledges are cast or formed on the sides of the vessel, serving as a pen rack.

[Printed, 8*d*. Drawing.]

A.D. 1865, June 15.—N° 1624.

LAWRENCE, PHINEAS, and JEFFERYS, GEORGE.—"Improvements in copying presses." The press is composed of a bed plate, platen, and cam, having a lever cast with it or firmly fixed to it. An arm extends up from one side of the bed plate, and bends over the middle, or thereabouts; the arm is forked at the end to receive the axes of the cam. The cam has ratchet teeth round the upper part of its periphery, into which one or more pawls take, pivoted to the arm and provided each with a spring; a groove is cut on each of its faces, and the top of the pillar of the platen is formed with projections which engage in the grooves. The pillar is guided by a branch projecting from the arm, and the platen is recessed at the part next the arm for increased guidance. A flat spring, to assist the upward action of the platen, is fastened at one end to the arm; its other end is forked and presses against studs on the pillar. Other arrangements of springs may be employed, or springs may be dispensed with altogether. The ratchet teeth may be on a disc fixed to the cam on one or both sides thereof.

[Printed, 8*d*. Drawing.]

A.D. 1865, July 14.—N° 1846.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Edward Casper.*)—"Improvements in copying letters, plans, and other manuscripts, and in the apparatus and substances employed therein." The ink, which forms the principal part of this invention, is made as follows:—2 parts (by weight) of nut galls are boiled during 6 hours in 25 parts of water, rain or distilled; 1 part of gum arabic, then 0·4 of sulphate of iron, and 0·1 of sulphate of copper are added. The mixture is stirred once a day for about 3 months; it is then drawn off, and 4 parts of white sugar and 0·1 of concentrated liquid decoction of alder

wood and tan in equal proportions are added thereto. The paper for receiving the copy should be white, unsized, and perfectly free from chlorine; it is to be damped with a brush or hair pencil. For protecting the paper during the operation of copying the patentee employs "a sheet or sheets of transparent varnished "gauze specially prepared for the purpose." If the ink, which the patentee calls "encre électro-chimique," be for exportation, &c. it may be reduced by evaporation to a pasty consistence and enclosed in boxes.

[Printed, 4*d*. No Drawings.]

A.D. 1865, July 14.—N° 1853.

TRIPP, STEVENS.—(*Provisional protection only*).—"Improve-"ments in the means of securing envelopes for enclosing letter "and other papers." Metal foil is applied on the exterior of the envelope, at the point where the three fixed flaps meet; the ends of the foil are passed through slits and folded down on the inner side of the envelope. "A pocket-like place," surfaced with gum or other adhesive matter, is provided for the introduction of the tab of the fourth and loose flap, which when wetted adheres to the gum and will be underneath the metal foil. The foil may be applied in a variety of ways, and it may be stamped with any device, or covered with paper and with a seal or stamp.

[Printed, 4*d*. No Drawings.]

A.D. 1865, August 14.—N° 2097.

BRAMPTON, FREDERICK.—"Improvements in files or holders "for holding letters and music, and for other like purposes." The case of the file is similar to a bound book cover; in the back, and crossing it, are inserted four or more steel springs, nearly flat, but turned inwards at their ends. A metallic bar, provided with a series of pointed pins, is attached to the inner edge of one side of the cover, so that it can turn on the edge, and that the points of the pins can engage in the opposite spring ends or be disengaged therefrom. To the ends of the bar a metallic tube is connected by a cord passing down the tube and fastened therein to the extremities of a coiled spring, whose expansion is limited by collars. A flap of strong card is fixed to the tube "in the position of a "*fly leaf* of a book." When papers are to be filed, the tube *with its flap* is to be lifted over the pins; when the papers have

been placed on, the tube is returned to its position; it presses on them and forces them towards the base of the pins.

[Printed, 8d. Drawing.]

A.D. 1865, August 25.—N° 2186.

OWEN, GEORGE.—"Improvements in copying presses for copy-"ing letters and other written documents." A piece of hard wood, of the size of the copying book intended to be used, is secured to one side of and within a stout oblong frame of wrought or cast iron; these "form respectively the bed plate and bridge." A similar piece of wood, "having a piece of stout iron about an "inch wide screwed across the middle in the direction contrary "to the grain of the wood, forms the upper plate of the press." The lever (detached) is an oval or flat iron rod, about a quarter of an inch thick and an inch wide, having a handle at one end, and at the other about an inch of its substance bent at a right angle, "in such a manner that the narrow edges shall still be in their "original planes." The required pressure is produced by placing the bent end of the lever "between the middle of the bridge and "the iron upon the upper plate," and then depressing the handle.

[Printed, 4d. No Drawings.]

A.D. 1865, September 2.—N° 2267.

ELLIS, HENRY.—"Improvements in the manufacture of com-"pounds of silica, and in the production of silicated alkaline "inks, colours, and dyes." All the soluble silicates mentioned in the Specification of letters patent granted to Mr. Ellis, dated Sept. 29th, 1862, N° 2645, as well as the ordinary commercial silicates, may be employed. After a brief description of his methods of producing "soluble alkaline silicates, supersilicates, "and compound silicates," the patentee details that portion of his invention which belongs to this series, premising that "dyes "and other substances which yield colouring matter to alkaline "solutions" may be used for the purpose. "For the manufac-"ture of inks, the colouring matter of such dyes or substances "is precipitated or gelatinized by means of a solution of any one "of the soluble supersilicates or compound silicates before men-"tioned, the precipitate or gelatinous mass so obtained being re-"dissolved in a solution of any alkaline, subsilicate, or commer-"cial silicate of soda or of potash." Biborate of soda, or

" aluminates of potash or of soda," may be used as solvents of dyes and substances containing colouring matter; and a solution of silicate of soda or of potash, or a solution of caustic soda or potash will " dissolve the precipitated silicated colours or dyes;" or " the colours may be combined first with a subsilicate, and the " desirable quantity of supersilicate afterwards added." A colour, well suited for the manufacture of ink, is the blue or red archill of commerce; " of this, one part by measure may be taken and " combined with half the quantity by measure of a solution of " supersilicate of soda or of potash, or of any of the compound " silicates of specific gravity 1·3, or thereabouts, and half a part " of the commercial solutions of the alkaline silicates of specific " gravity 1·5, or thereabouts. The whole should then be agitated " together until the precipitate first thrown down is dissolved, " water or alkaline solutions alone, or with gums, resins, or " colouring, or other matters dissolved therein being afterwards " added." For stock ink a solution of soda silicate of iron is formed, " by adding a solution of sulphate of iron to a concen- " trated solution of silicate of soda of about specific gravity 1·3, " until the whole of the precipitate is thrown down." The precipitate is washed with water, pressed, and added " in the moist " state to as much solution of commercial silicate of soda, of " specific gravity 1·5, or thereabouts, as will dissolve the whole." One part of this solution and two parts of the archill of commerce being mixed together, " as much solution of silicate of soda " of specific gravity 1·3 to 1·5 as will dissolve the whole of the " precipitate " is added. This ink may be converted into a copying ink, " by the addition thereto of a solution of silicate of soda of " specific gravity 1·5 in various quantities, and by preference a " solution containing an excess of alkali." Other compound silicates may be used for the production of stock ink, and soluble potash silicates may be substituted for the soda silicates. A useful compound " for varying the consistence of the stock ink will " be equal quantities of archill and a solution of hydrate of soda " or of potash, containing 15 parts of either caustic alkali in " 100 parts of water." Various forms of carbon may be employed to vary the tint of the archill ink; aniline black may be used for the purpose. For red ink " magenta or other aniline " *colours may be* used in the dry state, or in the state of solution;" *but as dry colours* " will not directly combine with the soluble " *silicates, it is* necessary to use intermediate bodies, such as

" resins or gum resins;" gamboge is well adapted for this purpose. " In some cases, a solution of cochineal and other colouring " matters in ammonia or other alkaline solutions may be " advantageously used to vary the tint of the original ink or " dye." The liquid aniline dyes are treated as follows:—for red ink one measure of aureine is added " to an equal measure of " commercial silicate of soda in solution of specific gravity 1·5;" after stirring the mixture it is allowed to stand, and the liquid part is poured off for use. " By varying the quantity of either " the silicate or the dye, various shades of red may be produced; " and gamboge or other gums, resins, or gum resins may be added " at discretion, as with the dry aniline colours." Various other liquid aniline dyes may be treated in the same manner, " thereby " producing a great variety of solutions suitable for writing fluids " of great permanency." Documents, written with inks prepared according to this invention, " may be rendered still less delible, " by means of a coating of a solution of supersilicate or com- " pound silicate of potash or of soda."

[Printed, 6d. No Drawings.]

A.D. 1865, September 5.—N° 2281.

BÜNGER, WILLIAM.—(*A communication from Frederick Kuhrmann.*)—" Improvements in vessels or apparatus for melting " sealing wax, glue, or other substances." Provisional protection was granted for this invention on April 3rd 1865. As the description given in the Specifications does not differ in any one respect, the reader is referred to the abridgment, A.D. 1865, April 3, N° 931.

[Printed, 6d. Drawing.]

A.D. 1865, September 21.—N° 2412.

DAVIS, HENRY ALBERT.—" Improvements in apparatus for " affixing postage stamps and other labels to letters and docu- " ments." The chamber containing the labels is of any suitable material, closed at top by a lid and open at the bottom; under the lid is a bridge, and in both an aperture to admit a sliding tube, surmounted by a knob having in its middle a hole and tube. Inside the slider, between the knob and bridge, is a spiral spring; the slider is prevented from being pressed too low by

pins which work in slots in it. At the bottom of the slider is a perforated plate, to which is secured a piece of india-rubber kept in its place by another perforated plate. A headed pin is pushed through a hole in the labels (previously made by a piercer) and through the rubber and plates, from the open end of the chamber. The chamber may be attached to a damping apparatus consisting of a hollow bed plate and an upright recessed at its lower end. In the upright is a slot and at its top a stud; there is also a stud fixed to the chamber and working in the slot. The chamber is connected to the upright by elastic bands which pass round the studs. A damper of flannel or other absorbent works in a slot in the top of the bed plate and is supplied with moisture from water contained therein.

[Printed, 8d. Drawing.]

A.D. 1865, September 26.—N° 2468.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Henry Tillinghast Sisson.*)—(*Provisional protection only.*)—"Improvements in portfolios and paper files." The file consists of a holder provided with a series of pointed hooks, a spring flap, and a contrivance for holding back the flap while papers are being placed on or taken off the hooks. The holder, by preference of sheet metal, is cylindrical at its extreme ends. The flap is a flat or slightly curved strip of sheet metal or other suitable material; it is made with cylindrical ends which fit into the holder ends so as to turn freely therein; it has notches cut in its lower edge to allow of its turning on its axes without interfering with the hooks, and it has at its extremities coiled springs, one end of each being secured to the flap, the other to the holder, and operating to press the flap in a direction toward the side of the holder on which are the hooks. "A spring latch and catch of well known construction" is used for holding back the flap. The patentee describes a modification of the latch and catch arrangement and two other contrivances for the same purpose. When the file is required for a portfolio, a suitable cover is provided for it; for news and other papers a handle is attached, "and in the latter case instead of fastening the hooks to the barrel case they may be fastened to the folder."

[Printed, 4d. No Drawings.]

A.D. 1865, September 28.—N° 2486.

NOPITSCH, MAURICE.—(*Provisional protection only.*)—"Improvements in pencils and pencil cases having a moveable lead." This invention "consists in causing the holder or part where the "lead issues to be made with three, four, or five branches or "nippers, so that on their being drawn together by means of a "moveable ring acting on a metal tube, and pressing on the "holder, the branches are closed upon the lead, and thus securely "maintain it." The ring works by a screw.

[Printed, 4*d*. No Drawings.]

A.D. 1865, October 6.—N° 2573.

CAMERON, ROBERT MACINTYRE, and CAMERON, DUNCAN.—"Improvements in pens used for writing." By this invention a pen is produced, having the extreme tips of the nibs turned upwards in the form of a segment of a circle, thereby enabling it to "travel over the surface of a rough, straw, or other paper" of an inferior quality. The various stages of manufacture are much the same as those "ordinarily employed in the making of "metallic pens." In the Provisional Specification the turning up of the nibs is to be effected, by preference, *before* the pen is tempered and hardened; but in describing the process the patentees say:—"*After* the pens are hardened, split, or otherwise "finished, their extreme tips are passed into or between a pair "of pressers or rollers, which are caused to draw in and squeeze "or press upon the portion of the pen to be curved."

[Printed, 6*d*. Drawing.]

A.D. 1865, October 21.—N° 2730.

DUFRENÉ, HECTOR AUGUSTE.—(*A communication from Joseph Jules Derriey.*)—(*Provisional protection only.*)—"Improvements "in machinery for the manufacture of lozenges, wafers, or pas-"tilles of pasty materials." The machine, which is mounted on a strong iron frame, consists of a marble slab for supporting the paste, "three series of cylinders," two endless cloths, stamps or punches and a cutting cylinder, and the machinery requisite for action. It is worked by hand "by means of a crank, or by any "other motive power." The crank transmits motion to two gearing wheels, "one of which in turning gives by means of an "excentric a to-and-fro movement to the stamp carrier, and com-

" municates to the other placed underneath an alternate rotative " movement, which when the pastilles are cut and enclosed in " the cutting cylinder causes the latter to make half a turn, so " that the pastilles may fall on the plank underneath." The driving shaft carries a fly wheel, and "gives motion to a wheel " carrying an excentric pin attached to a connecting rod, which " changes the rotative movement to a to-and-fro movement, and " causes a click to catch on a ratchet wheel which turns the " cylinders, one of which turns the other." Behind the "lami- " nating cylinders" is an endless cloth for conducting the rolled paste in front of the machine. In front of the cutting cylinder is also an endless cloth, "which carries with it the cuttings sepa- " rated from the pastilles."

[Printed, 4*d*. No Drawings.]

N.B.—For a fuller description of the machine see Abridgment, A.D. 1866, April 2nd, N° 935.

A.D. 1865, November 3.—N° 2834.

LILLY, Reuben Cornelius.—(*Provisional protection only.*)— "An improved penholder," that is to say, one which will contain a supply of ink. The barrel or case is the ink reservoir; it has a screw cap at the top; and inside is a spiral or other spring, one end of which presses against the cap, and the other against a valve in the lower part. When ink is required for the pen, a pin moving in a slot in the barrel is forced upwards. The pin is attached to an inner tube which holds the pen, and which has affixed to its upper end a piece of straight wire. The wire opens the valve, and ink immediately runs down to the pen.

[Printed, 4*d*. No Drawings.]

A.D. 1865, November 13.—N° 2918.

STEPHENS, John.—"Improvements in portfolios, writing " desks, writing cases, and other similar apparatus." In constructing these articles a writing surface of leather, parchment, or other suitable substance, is fastened at one edge to the back of a portfolio, or to the front edge of a writing desk or case; at the sides (creased or folded to allow of contraction or expansion) to the sides of the case; and at the other edge to a bar and to a *piece of* vulcanized india-rubber which is fixed to a bar hinged *to the case*. This hinged bar is provided with a tang of leather,

by pulling which the bar is raised, and the surface is caused "to "assume an inclined position." The bar is supported in its elevation by hinged props retained by notches. The bar may be raised and supported by screws, "the heads of which are formed "to receive a key."

[Printed, 8*d*. Drawing.]

A.D. 1865, November 13.—N° 2923.

LONG, JOHN JEX.—"Improvements in cutting or dividing "timber, and in the machinery or apparatus connected there-"with." The timber is to be cut up into small pieces or splints for the manufacture of lucifermatches, pencils, &c. The machinery is fixed on an iron frame, in the lower part of which the main shaft revolves by means of a belt actuating a pulley thereon. At one end of the shaft is a fly wheel, and at the other a disc crank from which a connecting rod passes and is coupled to the knife frame; as the crank revolves, the frame is caused to reciprocate in vertical slides. "Attached to that portion of the "framework in which the vertically acting knives are located is a "projecting set or sets of knives, which cut into the blocks of "wood as these alternately travel before them; by these means "the wood is first divided into a number of horizontal strips, "needing only the downward motion of the knife to separate "them in the form of rectangular bars." A pinion on the main shaft actuates a spur wheel on a cam shaft. In each half of the cam is a groove, in which antifriction rollers turn, carried on studs in a lever. The lever (which vibrates on a bolt fixed to the frame) is joined at its upper end by a similar bolt to a short connecting rod which couples it to a saddle, so that, as the cam revolves, it communicates a horizontally reciprocating motion to it. The saddle, furnished with two gutters and carrying two blocks of wood therein, travels in V or other shaped slides. The saddle is fitted "with two sets of forwarding gear," which need no description, as the patentee says, "there are many kinds of forwarding "gear which will fulfil the conditions required." Each set of little knives is fixed into a metallic block which slides in a recess in the frame; in the block is a hole through which an ordinary eccentric passes; a short shaft carrying the eccentric is provided with handles by which the knife-holding box is drawn back when required behind the level of the face plate; this is necessary

when a hard knot occurs in any of the blocks of wood. The vertically acting knife is used to remove the knotty portion in flakes, and, as soon as this is effected, the little knives are again thrown into action.

[Printed, 10*d*. Drawing.]

A.D. 1865, December 11.—N° 3193.

GRIFFIN, JAMES THEODORE.—(*A communication from George Schramm.*)—"An improved ruler," which "will adapt itself to the "contour of the book or other surface to be ruled, which will not "readily slip while in use, and the ruling edges of which will be "raised clear of the paper." It consists of a strip of hardened india-rubber or ebonite, to one side of which is affixed a strip of vulcanized rubber of the same length or nearly so, but narrower, and "chamfered off towards the ends." A strip of brass, steel, horn, or other flexible material, may be substituted for the hardened rubber, and any suitable substance for the vulcanized.

[Printed, 8*d*. Drawing.]

A.D. 1865, December 23.—N° 3325. (* *)

NEWTON, WILLIAM EDWARD.—(*A communication from Henry Wurtz.*)—"Improvements in the preparation of glue or gelatine "so as to render it insoluble in water, and applicable by the "admixture of other substances to various purposes for which "common glue or gelatine cannot now be used." This invention "relates to a mode of treating or acting chemically on common "glue or gelatine, so that without being deprived of its gela-"tinizing power it will become in the process of drying converted "into a substance which is insoluble in water, so that by the "addition of various ingredients it may be converted into a "substance similar to bone or ivory." This change is effected "by heating the glue or gelatine in the form of a strong solution "in water together with a strong solution of chromic acid, or of "an alkaline bichromate (bichromate of potash, for instance)." Before the bichromate is added, "the characters of the final "product may be greatly and variously modified" by the admixture of various substances. "Weight may be given by "admixing heavy substances in powder. Hardness may be "increased by adding sand, clay, emery, pounded glass, red oxide "of iron (jeweller's 'rouge'), or tripoli; and to increase its

" strength and toughness chopped fibre may be added, either " vegetable, animal, or mineral." It may be prevented when in the form of very thin sheets from becoming brittle by rubbing it with glycerine: different colouring matters also may be added. Sometimes it is necessary to grind the materials together, the grinding surfaces being kept sufficiently heated " to prevent the " gelatinization of the liquid." When powders of a greasy or resinous nature are used, they may be " slightly moistened with " diluted alcohol." Compounds may be formed " by introducing " some resinous and oily substances into intimate combinations " with the modified gelatine in the form of alcoholic solutions." The patentee details the various uses to which the new material is adaptable; " nearly every use to which the hard vulcanized rubber " compounds, horn, ivory, bone, shell, papier maché, have been " applied "—amongst them to the manufacture of penholders, pencil-cases, rulers, paper knives, &c.—as well as his mode of operation.

[Printed, 6*d*. No Drawings.]

A.D. 1865, December 23.—N° 3335.

GILL, WILLIAM, and BIRD, BUCKINGHAM.—" A new method " of and apparatus for damping and affixing adhesive stamps." This apparatus, called by the patentees the " unique postage " stamp vade mecum," is composed of, 1, a bed, the surface of which is covered with baize or other material; 2, a handle; 3, a metal frame secured thereto; 4, brass or other metal slides fitted to the handle; 5, a damping roller in contact with a leading guide roller; 6, a reacting spring for conveying pressure to the damping roller; 7, a pressing roller coated with leather or otherwise; 8, a surface plate with toothed cutter for dividing the stamps at their perforations; 9, an under plate to which the cutter is attached; 10, a circular opening " for fingering the stamps as they pass " between the upper and lower plates to the cutter;" 11, coils of stamps " with their gummed surfaces outwards;" 12, a winch handle and roller for " coiling the stamps;" 13, a loose flap moving on a wire pin " for guiding the stamps into the side grooves;" 14, a curved metal guard " for enclosing the underneath opening " to the stamps;" 15, a trough at one end of the bed; and, 16, a tank for supplying the trough. The stamps may be placed " separately within a box or slide fitted to the instrument or

" otherwise." The labelling part may be used independently of the bed and damper, by placing a trough "within the instrument " in close proximity to the damping roller."

[Printed, 8*d*. Drawing.]

A.D. 1865, December 27.—N° 3343.

BENN, JOSEPH, and LUCKMAN, GEORGE OSWALD.—" Im- " provements in apparatus for damping and gumming labels, " stamps, envelopes, and sheets of paper." The apparatus consists of a reservoir communicating with a chamber by means of a slide or other valve. The reservoir is charged from the top which is provided with a screw plug. The valve is kept closed by a spring acting against the valve lever. The upper part of the chamber is formed of a finely perforated plate connected by end partitions to a lower perforated plate; the space between the plates is filled with sponge or other porous substance. When sufficient water or adhesive solution has been admitted to saturate the sponge, the label is damped or gummed by being passed over the upper plate. If the apparatus be required for applying gum to the flaps of envelopes, the upper plate must be perforated accordingly.

[Printed, 10*d*. Drawing.]

1866.

A.D. 1866, January 12.—N° 104.

HART, ALFRED HENRY.—" Improvements in the manufacture " of fasteners for binding papers and for other like purposes, and " in machinery to be used in the said manufacture." The fasteners are strips of metal bent into the shape of a T. Two methods of preparing the blanks are described; in the first, cylindrical wire is passed between a pair of rollers, thus flattening the wire and leaving the edges rounded; in the second, thin strips are cut from sheet metal by means of circular cutters. The blanks made by either process are cut and pointed at their ends by machinery of the following construction:—on the bed of a stamping press is fixed a die, in the middle of which is an opening with cutting edges "of a V shape, the pointed ends being presented to each

" other." At the back of the die is a V-shaped stop fastened to a bar; by means of holes in the bar and a screw pin the distance between the stop and the cutting edge of the die can be regulated. On the die is a guide against which a side of the strip bears on being fed to the die. A punch having a corresponding figure is fixed to the bolt of the press in the ordinary way.

[Printed, 8*d*. Drawing.]

A.D. 1866, January 18.—N° 170.

WILLIAMS, JAMES.—(*Provisional protection only.*)—" Improved " sheets, plates, or apparatus to facilitate improvement in hand- " writing." This invention " consists of a number of head lines " with perforated spaces between them at regular intervals;" the material of which they are constructed may be either cardboard, millboard, or other stiff material. The writing to be copied may be printed on the perforated sheets, or on paper and affixed to them by some adhesive matter. " To keep the writing straight " and uniform " lines are dotted down the page, which serve to separate the words, " and short guide lines opposite the spaces " are arranged opposite the lines on to which the writing is to be " copied."

[Printed, 4*d*. No Drawings.]

A.D. 1866, January 20.—N° 183.

DEAN, HENRY, and WHEELER, GEORGE ALFRED.—(*Provisional protection only.*)—" An improvement in penholders, con- " sisting of an arrangement for supplying the pen with ink." The holder is a tube of metal, glass, or other material; within it is an india-rubber spring so placed that the pressure of the fore-finger or thumb may be readily applied thereto. In the bottom of the tube is a small aperture (there may be more than one), so that, when the spring is pressed, a sufficient flow of ink to the pen is obtained. An opening to fill the holder " is afforded by " disconnecting the portion of the holder containing the pen. " This arrangement will also enable the writer to regulate the " relative positions of the spring and pen to suit his own hand." A metal or other cap will afford protection to the pen " when " required for outdoor use."

[Printed, 4*d*. No Drawings.]

A.D. 1866, February 12.—N° 438.

ARNAUD, CHARLES.—(*Provisional protection only.*)—"Improvements in copying presses, which improvements are also "applicable to mangles or linen presses." In carrying out this invention as applied for example to a letter copying press, two flat boards or tablets of wood or metal are required, "connected "together indirectly by the intervention of a small standard at "each side, which may be pivotted to a metal cheek let flush "into the edges of the lower tablet near the centre thereof." At the upper end of the standards is an aperture, into which is fitted a moveable plug held in its place by a spring or other contrivance, and on the inner face of the plugs is formed an eccentric pin or pivot which engages in a corresponding hole in each limb of a forked lever, forming the fulcrum thereof. The lever "is con-"nected with the upper tablet by a pivot which enters a corre-"sponding hole in a metal cheek piece let into each side of such "tablet, so that on raising or lowering the lever the upper tablet "will be raised or lowered with it;" there may be several such holes disposed one above the other, "thereby giving a greater "range to the thickness to which the press may be adapted." The standards may be made to pivot at their lower ends in the cheek pieces of the lower tablet. Adjustable centres "may be "placed at the lower ends of the standards in lieu of or in addition "to the adjustable centre or fulcrum at the upper ends." To prevent any tendency of the press to tilt over when pressure is applied, the lower tablet is carried forward beyond the end of the upper one. Guiding ledges are formed on each side or edge of the lower tablet.

[Printed, 4*d*. No Drawings.]

A.D. 1866, February 28.—N° 612.

BRAMPTON, FREDERICK.—(*Provisional protection only.*)—"Improvements in files or holders for holding letters, invoices, "and music, and for other like purposes." The first part of this invention relates to two improvements on an invention for which Letters Patent were granted to Mr. Brampton, dated August 14th 1865, No. 2097. The first improvement consists "in making "*a tongue* on that end of each of the springs at the back of the "*holder against* which the pointed pins bear," so that the points come into contact with the tongue only; the second, "in

" making the spring metallic tube, by which the papers are held " down, detachable from the file or holder at one end," by connecting the cord to the bar " by means of a knob or washer on " the cord engaging under a slot or notch in the end of the bar." The tube has a thin plate running along its whole length; in the plate are oblique slots, in which, " when the tube is in its normal " position," the pins enter. The second part refers to the following improvements in paper files:—In such as have a back with " cross elastic bands for holding down the papers against " the said back," cross tubes are substituted, held down by cords passing through the tubes, and having a coiled spring in their middle. In wall files " consisting of a back board having a " curved hook on which the papers or invoices are filed," the hook is connected to a plate fixed on the back of the file, and " is capable of a sliding motion." The lower end of the plate carries a short bracket having a slot in its top, and the hook is rigidly fixed by depressing it so as to engage in the slot. The hook is made of one piece of wire, its spring being at the back and made of the same piece of wire. In files called " spring " binders " a supplementary holder is added, consisting of a series of pasteboard flaps connected at the back by a binding capable of expanding. " The flaps are joined to the back binding " by very flexible strips of cloth or fabric."

[Printed, 4*d*. No Drawings.]

A.D. 1866, March 8.—N° 709.

NORMAN, JOHN ABRAHAM, and NORMAN, ABRAHAM.—" Improvements in pen and pencil holders or cases," whereby the length of the article is shortened as much as possible when not in use. The case is made in two parts, the lower sliding in the upper. Inside the case are three telescopic tubes, an outer, inner, and " holder " tube which is pushed out by the movement which elongates the case. In the outer and inner tubes are helical grooves or slots cut in opposite directions; a pin fixed in the holder works in the slot of the inner, while a pin on the inner works in the slot of the outer. To prevent the lower part of the case from rotating a pin fixed in its side and near the end slides in a longitudinal groove in the upper part. When the case is extended, the holder tube is kept from being pressed back by forming the outer end of the slot in the inner tube " with a hori-

" zontal part" against which the pin of the holder bears; it can not therefore be pushed back until the pin "is brought into the " diagonal part of the slot."

[Printed, 6*d*. Drawing.]

A.D. 1866, March 24.—N° 873.

NEWTON, ALFRED VINCENT.—(*A communication from Edward Augustus Whitney, Henry Roberts, and William Bainbridge Hale.*) —(*Provisional protection only.*)—" An improved pencil for writing " or marking upon textile fabrics." One composition for this pencil is made of "nitrate of silver half an ounce, nitric acid " six to ten drops, glue one ounce, lampblack half an ounce, " brown or other sugar one drachm." The glue, lampblack, and sugar are stirred together until they are completely incorporated; the mixture is then put into a suitable dish "and allowed to " become slightly cool, but continually agitated or stirred so that " it cannot set." The nitrate of silver, having been dissolved in the least possible quantity of distilled water with the addition of the nitric acid, is poured into the dish, "and the whole well stirred " and mixed together." The compound "is next spread in a " thickness of from one-sixteenth to one-eighth of an inch upon " paper in such manner as to leave a clean margin entirely " around the same, and having become set it is covered with an- " other and a similar sheet of paper." It is then "pressed and " dried, and cut into small strips corresponding in shape to " the leads so termed of ordinary lead pencils," and the strips are encased "to give them sufficient stiffness to be used." Another composition consists of "three parts nitrate of silver, two " parts gypsum, and one part plumbago," "the several ingredients " being manipulated in a manner substantially similar" to that before explained.

[Printed, 4*d*. No Drawings.]

A.D. 1866, March 24.—N° 875.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Henry Tillinghast Sisson.*)—" Improvements in portfolios and " paper files." This invention affords "a convenient means for " readily filing letters or papers in book form," and with a slight *modification* it can be used as a file for newspapers. The holder *or case (by* preference of sheet metal) "is semicylindrical in form

" with the exception of a small portion at the extreme ends, " which is cylindrical for the accommodation of the springs " which actuate the folding flap;" and to it "are attached a " series of hooks pointed at their ends and curved to correspond " with the arc which the edge of the folder flap will describe." This flap is a flat or slightly curved strip of sheet metal or other material, in length a little less than the opening of the holder and a "little more than one-half its width;" it is made "with cylin- " drical ends which are fitted into the tubular ends of the holder " case so as to turn freely therein; and, as the edge of the flap " will overlap the edge of the case, it is necessary to cut notches " or openings in the same corresponding to the number of hooks." It is provided at its ends with coiled springs "having each one " end attached to the folder and the other to the cylindrical end " of the holder, and operating to press the flap in a direction " toward the side of the holder upon which the hooks are " attached." A spring latch and catch, "which may be arranged " in various ways familiar to all mechanics," holds the flap back when required, and on the flap is a stop which will engage with the latch. The spring of the latch is furnished with a button " which protrudes through the shell of the holder, and which " upon the application of pressure will liberate the folder." The cylindrical ends may be dispensed with, and there may be "a plain " shaft extending through the axis of the case, and upon this shaft " at one end, and next to the end of the case, wound a spiral spring, " which will give to the shaft and flap a tendency to make an end- " wise movement, but which will be restrained by the head of the " case at the other end until the flap is laid completely back, when " it will spring into a notch cut in the edge of such circular head, " and hold the same until pressure is applied to the end of the " shaft, which projects through the head and has a thumbpiece " upon it." In a modification, "so far as relates to the means " for holding back and operating the flap," there are not any coiled springs or spring latch; "the axis of the folder flap" is formed near its ends "into the shape of a crank," or eccentrics are placed "at the same positions;" underneath them are flat springs, "against which the cranks or the faces of the eccentrics " will bear, and as the flap is turned back will depress the " springs." The apparatus is intended to be provided with a cover when it is to be used as a portfolio; and "by attaching a " handle to the holder and dispensing with the covers the same

" can be conveniently used as a file for newspapers and other " papers, and in the latter case instead of fastening the hooks to " the barrel case they may be fastened to the folder itself."

[Printed, 1*s.* Drawings.]

A.D. 1866, April 2.—N° 935.

DERRIEY, JOSEPH JULES.—" Improvements in machinery for " the manufacture of lozenges, wafers, or pastilles of pasty " materials." Provisional protection was granted for this invention on October 21st, 1865, No. 2730. No drawings accompanied the Specification, consequently a clearer notion of the machinery will be obtained from the following abridgment:—The patentee prefaces his description with the remark that the two parts of this machine, one for rolling the paste, the other for cutting and stamping it, may form two distinct machines, but that he prefers combining them. Two frames are joined by tie pieces; at the back is a slab with ledges on which the paste is placed. In front of the slab are "three series of two cylinders;" the last pair " are put at different distances apart, so as to produce successive " and gradual laminatings." During the rolling starch powder is spread over both surfaces of the paste by means of hoppers; the quantity is regulated by a circular brush which moves in an opposite direction. The paste travels from the last pair of rollers on an endless cloth to stamps or punches and a cutting cylinder. At each vertical movement of the stamp carrier the cutting cylinder turns half over by an arrangement of cog wheels. The wafers, &c. fall on to a plank which is moved along by straps. The cuttings are carried forward by another endless cloth outside the machine. Motion is given to the shaft of the fly wheel by a crank arm or other mechanism. The advance of the paste is effected by the intermittent movement of the last pair of cylinders, which is caused by a pawl acted on by a lever and a connecting rod, which takes its motion from a large wheel and an eccentric pin.

[Printed, 10*d.* Drawing.]

A.D. 1866, April 25.—N° 1166.

BUTCHER, HENRY CHARLES.—" An apparatus to be used for " *piercing and* holding cigars, and as a tobacco-stopper, pencil- " *case, whistle,* seal, tooth-pick, or watch-key." The " main

" characteristic " of this invention is the arrangement of tubes, spring, piercer, and ring to form an instrument for piercing and holding cigars. The only part relating to this series is the addition to the ring (which is attached to the lower end of the outer tube) of " another tube, which may be of equal or greater " or lesser length than the tube containing the spring and " piercer," and which contains " a pencil and a penholder " pushed in and out by a slide or screw, or in any manner."

[Printed, 8*d*. Drawing.]

A.D. 1866, May 2.—N° 1236.

BENVENUTI, FORTUNÉ FRANÇOIS. — " An improved feeding " holder, applicable to writing and drawing pens." An essential feature of this invention is " that it admits of writing and draw- " ing or ruling pens being attached to the same feeding holder." The holder is a tube of glass, metal, ebonite, or any other material; if it be of glass or ebonite it has mountings of metal. The top is provided with a screw cap, through which the upper end of a piston rod protrudes. On the lower end of the rod is a cork or other substance capable of working in the holder freely but air-tight; the cork is secured to the rod by a stud at top and bottom. At the lower end of the holder is a circular opening, through which the ink is poured in. The opening is constructed to receive an air-tight screw, to which the penholder or drawing pen, together with a capillary tube, is screwed, the latter being in communication with the interior of the holder. The piston rod is furnished with a stop to prevent its " being pushed down " inadvertently." The rod may be arranged to work by the screwing and unscrewing of the cap.

[Printed, 6*d*. Drawing.]

A.D. 1866, May 8.—N° 1307.

SEELEY, GEORGE.—(*Provisional protection only.*)—" Improve- " ments in penholders." The penholder is formed elastic " be- " tween the part where the pen is inserted and that where it is " held by the user," by the insertion of one or more pieces of flat steel spring to connect the parts together. " Set screws or " pins may be employed to adjust or retain the parts in " position."

[Printed, 4*d*. No Drawings.]

A.D. 1866, June 7.—N° 1569.

TONGUE, JOHN GARRETT.—(*A communication from Maltby Kingston Pelletreau and Ellicott David Averell.*—"Improvements "in electro-magnetic striking attachments for paper-ruling "machines." The rollers, apron or endless cloth, feed board, ink fountain, and rocking pen bar, are constructed and arranged in the ordinary manner. To the "rock shaft" of the pen bar a lever is secured, having attached to its rear end the armature of an electro-magnet which is fastened upon one side of the frame at one extremity, the other being connected thereto by a spring. The spring exerts a constant tendency to lift the armature and pull the pen bar in a direction to raise the pen points, but is "not "strong enough to overcome the attraction of the magnet upon "the armature when the electric circuit through the magnet is "closed." On one side of the frame stand two upright metal posts, which must be insulated if the frame be not of a non-conducting material. Two horizontal arms of iron are inserted through holes in the posts and secured therein by set screws, and two metal rods are inserted through holes in the arms and similarly secured. Each rod is fitted at its lower end with a metal foot piece carrying a grooved roller of hard non-conducting material, and is adjustable forward and backward by a set screw in front and behind; the rollers rotate upon the apron or upon the sheets of paper. To the front foot piece is attached a lever (but insulated from it) which vibrates in the direction of the apron and paper, and serves as a "circuit break" by the insertion of a piece of non-conducting material into a recess in the front side of its "hub." The vibration of the lever brings this piece into and out of contact with the point of a light spring, "which is so "attached to the foot piece as always to press lightly on the "hub." The lower arm of the lever has fixed to it a light finger which works in the groove of the roller, and whose extremity comes in contact with the apron or paper. A stop pin of insulating material is secured in the foot piece behind the upper arm of the lever; this arm is connected by a metal rod with a lever "of the second order" suspended by a pin from the other foot piece. This lever has also a finger working in the groove of the other roller: the pin is not insulated from the foot piece. One pole of a galvanic battery is connected by a wire with one pole of the magnet, the other pole of which is similarly con-

nected with one post; the other pole of the battery is connected with the other post. The patentee then describes the parts affected, the action upon the pens, the process of ruling, and slight modifications of the adjustment of the foot pieces. "The "pens may be made to strike upon and rise from each sheet of "paper several times to rule two or more series of down lines" by providing the ruling machine with a corresponding number "of "circuit breaking apparatus" all connected with the same battery and magnet. In a modification of the machinery "when "only required to rule one set of down lines," the magnet is arranged "under the front end," and the armature "is attached "to the corresponding end" of the lever. A spring is joined to the rear end of the lever to raise the armature, "the action of the "magnet and spring upon the pen bar being the reverse" of that in the former machine. A stationary strip of thin sheet metal lies on top of the apron, extending at one end to a considerable distance beyond the pen points, at the other over the front of the bottom roller and united at this end by a wire to one pole of the battery. The apron passes freely under the strip. The other pole of the battery is connected by a wire to one pole of the magnet, the other pole of which is similarly connected to a metal post standing on the frame. Through this post, and secured by a set screw, is inserted a horizontal arm extending laterally as far as the strip. Through the end of the arm is inserted a metal rod, at whose extremity is a roller which bears on the sheet of paper and holds it down on the strip. At the same end of the rod is a finger adjusted by a set screw to bear upon the strip "when there "is no paper passing under it." The patentee details the action of this machine and the process of ruling with it."

[Printed, 1s. Drawing.]

A.D. 1866, June 8.—N° 1582.

GRISWOLD, HENRY JOSIAH.—"Improvements in the manu- "facture of cards, tablets, and other articles from which marks "made with ink or lead pencil may be repeatedly erased by "moisture without injury to the surface." This invention is especially applicable to cards, price lists, skeleton maps, and other sheets, upon which it is desired that part of the writing or printing should be permanent, and the remainder easily erased. The card or sheet, after the permanent writing or printing has

been produced on its surface, is covered with a transparent waterproof composition; when this is dry, a finish may be imparted by passing the card or sheet between calender rollers. The patentee employs a composition made by preference of the following ingredients and in the following manner:—He dissolves 3 lbs. of shellac in 1 gallon of drysalter's "finish," and he combines therewith 1½ lbs. of powdered soap-stone; any other "very "fine grit" may be used instead of the soap-stone. The mixture should be ground as fine as possible and applied in a liquid state.

[Printed, 4*d*. No Drawings.]

A.D. 1866, June 14.—N° 1620.

HODGES, RICHARD EDWARD.—"Improvements in rulers," whereby the ruling edges are "raised clear of the paper," and the portion having the ruling edges is capable of projecting over one or more lines, thereby enabling the ruling "to be effected without "danger of spreading the ink." Three sorts of rulers are described; all consist of a body, a ruler, and a handle; the body rests on the paper. In one sort, the ruler, that is the portion on which the ruling edges are formed, extends beyond the body in front and on the sides; there is an upright handle at the back. In the second sort "for ruling close to the bottom of a book or "sheet of paper," the body projects beyond part of one side of the ruler; this projection rests on the surface to be ruled; in this sort the handle rises up from the middle. In a third sort, more especially adapted for ruling the money columns of account books, the body and ruler form a right angle.

[Printed, 8*d*. Drawing.]

A.D. 1866, June 26.—N° 1695.

SULLIVAN, HENRY.—(*Provisional protection refused.*)—"An "improved instrument for writing," consisting of a hollow pen handle to which a pen nib is attached. The ink is contained in the handle, and by opening a small valve (at the pen) a small quantity flows down to the pen point.

[Printed, 4*d*. No Drawings.]

A.D. 1866, July 13.—N° 1839.

WILEY, WILLIAM EDWARD.—(*Provisional protection only.*)—"*Improvements* in holders for marking materials, which improve-

"ments are also applicable as holders for other substances." The stem of the holder is bored in the ordinary manner; the point is split into two or more parts and a metal tube is put round it. At a short distance from the point a groove is cut, round which the tube is pressed inwards, but so that it may be capable of moving a little longitudinally; a bayonet joint, screw, or other contrivance may be employed for this purpose. Both point and tube are conical in shape. The lead or marking material is pushed forward by a slide or other means; or it "may fall forward by its "own weight," and then be held in position by the pressure of the tube on the point. Instead of boring the holder, it may be made in two parts: in one is cut a "rectangular or other suitably "formed groove;" the two are then glued together, and a lead of shape corresponding with the groove may be introduced.

[Printed, 4d. No Drawings.]

A.D. 1866, July 19.—N° 1879.

GILBERT, DENIS MARIE, and DUBREUX, LOUIS ADOLPHE. —(*Provisional protection only.*)—"A new fastening for letter "envelopes." For envelopes for ordinary letters each of the flaps is pierced with a hole corresponding with the outer diameter of an eyelet. One end of the eyelet is "spread or rounded out;" it is inserted from the inside through the three lower flaps; the letter is introduced, the upper flap is brought down with its hole over the eyelet, and suitable pressure flattens both ends and makes all secure. For large envelopes, or such as require "several sealings," other eyelets "may be applied for connecting together each to "overlapping flaps."

[Printed, 4d. No Drawings.]

A.D. 1866, August 8.—N° 2045.

HOARE, WILLIAM.—(*Provisional protection only.*)—"Improved "apparatus for damping direction and other labels." The object of this invention is to damp the gummed side of the label without wetting the other side. In a vessel, by preference of earthenware or metal (as it is to contain water), is mounted a roller, which may be covered with a piece of felt or other absorbent substance. Above this roller, "but about an inch or so apart horizontally," are mounted two guide rollers of smaller diameter; these are grooved to receive india-rubber bands, which pass round both of them and

serve to carry the labels into or out of the apparatus. Immediately above the damping roller is mounted a pressing roller; on this are projecting collars, "against which the india-rubber bands "bear as the roller rotates." By this arrangement the damping roller is "prevented from coming into contact with and thereby "wetting the pressing roller above, and yet it is brought suffi-"ciently near thereto to damp or wet the under side of the label "as it is passed through the apparatus."

[Printed, 4*d*. No Drawings.]

A.D. 1866, September 3.—N° 2257.

FROST, RICHARD.—"Improvements in means or apparatus to "be employed in order to facilitate the teaching of writing and "drawing." Three inventions are described. The first is the employment of a tablet of cardboard or other suitable substance for the objects set forth in the title. This tablet has in it a rectangular or other shaped aperture, which, when it is placed upon the paper, slate, &c. exposes only the required amount of surface for a line of writing or for a drawing. Copy models are fixed by pins or other means to the upper portion of the tablet, or may be printed thereon. This portion of the tablet may be in the same plane as the lower portion or slightly raised above, either parallel or inclined to the writing or drawing surface. The above arrangement may be modified; the upper portion may be made separate from the lower and connected to it by spring clips or other contrivance. The aperture may be formed on a separate piece of cardboard capable of turning round. The tablet may be provided with rollers, round which a number of models (mounted on web, &c.) may be wound, and slots may be cut in the tablet to permit of so doing; or one roller may be arranged to effect the same object. The tablet may be furnished with a frame, in which a number of sheets are fixed; on one side of the frame are notches, so that when one line of writing is completed the paper may be passed up; a spring catch takes into the notches. Or the sheets may be loose or formed into a book, and have on them spots or lines corresponding with marks on the side of the aperture. The second relates to means of "teaching the correct position in which "to hold a pen." This is accomplished by means of two guide *wires, connected at their ends to two other wires fixed to two standards on the tablet*; the penholder is flattened and placed

between the guide wires—one wire will answer the purpose if the holder have eyes or slots in it. The third is a method of "teaching "the pupil to make straight strokes." For this purpose a ruler is employed, capable of sliding upon oblique guides (affixed to the tablet) when pressed upon by the pen or pencil, and returning to its position by means of a spring or springs.

[Printed, 10*d*. Drawing.]

A.D. 1866, September 8.—N° 2309.

CHAPPLE, ARTHUR FRANK.—(*Provisional protection only.*)—"Improvements in ink-supplying penholders." To one end of a hollow holder a metal frame is attached, the outer end of which receives a nib in a slide. The frame is made in two parts hinged together, "the forward part being loose and the inner secured to "the holder, a spring above keeping the parts together. Depend- "ing from the forward part of the frame is a metal valve working "in a sheath or guide which closes the end of the hollow handle." The other end is secured by a screw which prevents any escape of ink therefrom. The pen is supplied "by increasing the pressure "on the paper, whereby the spring slightly yields; the forward "part of the frame rises and with it the valve, and ink flows into "a reservoir leading to the nib." When the pen is not in use, the forward part is prevented from rising "by forming a slot "therein, into which a stud on the holder takes."

[Printed, 4*d*. No Drawings.]

A.D. 1866, September 20.—N° 2410.

ASHWORTH, GEORGE, and ASHWORTH, ELIJA.—"Im- "provements in portfolios or cases for holding musical publi- "cations, periodicals, manuscripts, and the like matter, and in "binders to be used therewith." This invention requires binders for the sheets and bands and fasteners for the portfolios (which are made of any of the ordinary forms and materials). The binder is a wire clip bent into a T shape; the head forms a loop; the legs are "thrust through the fold of the sheets from the outside "to the inside," and flattened down, leaving the loop outside. The bands are strips of leather, caoutchouc, or other suitable material; they reach "from side to side across the back or "flexible part of the portfolio." They are attached at each end by fasteners of such shape "that one or both ends of each band

"may be readily detached." If the bands are of caoutchouc, "the ends may be secured by being drawn through slits or loops "in metallic holders, the slits being smaller than the section of "bands." The ends of the bands being detached at one side are passed through the loops, and on being reattached retain the sheets in position. A similar band and fasteners may be "applied "to the outside edges of a portfolio in lieu of ribbons or strings "if desired."

[Printed, 10*d*. Drawing.]

A.D. 1866, October 8.—N° 2592.

BETJEMANN, GEORGE, BETJEMANN, GEORGE WILLIAM, and BETJEMANN, JOHN.—(*Provisional protection refused.*)—"Improvements in the manufacture of articles commonly called "'writing' or 'library' sets, and other similar articles." The patentees propose to apply "slabs of polished stone or marble, "mounted with mediæval or other ornamental mounts," to the covers and other parts of sets, desks, caskets, albums, dressing cases, and like articles. The slabs are to be fixed "to a suitable "foundation forming the body of the article by cement, marine "glue, pins, ornamental nails, or screws and nuts." Similar mounts may be applied "when the body of such articles consists "entirely of stone or marble." If cement or glue is to be employed, "the parts coming in contact with each other" are to be roughened; if pins, nails, or screws, "they are attached to the "back of the metal mounts and passed through the slab of stone "into and through the material forming the foundation for the "stone or marble, and are there secured by rivetting or by nuts." Or "the mounts may be formed with nuts at the back thereof" for the reception of screws.

[Printed, 4*d*. No Drawings.]

A.D. 1866, November 16.—N° 3006.

DAVIES, GEORGE.—(*A communication from Pierre Labat and Bassot Brothers.*)—(*Provisional protection only.*)—"Improvements "in inkstands." The upper part of the body of the inkstand is in the form of an "inverted truncated cone, in order to afford a "more secure hold to a ring of india-rubber, the outer circumfe-"rence of which is fixed to the lower side of the metallic cover," whilst the inner circumference is stretched over the top of the

vessel, and by its elasticity forms an air-tight joint. Between the ring and the cover is an india-rubber diaphragm, both "being "firmly fixed by their outer circumferences in the rim of the "cover, which is turned over and compressed on to them." In the middle of the cover (which is slightly raised) a nut is secured, through which works a screw, having its lower end provided with a button for pressing on the diaphragm, and its upper end with a milled or other head for turning the same.

[Printed, 4d. No Drawings.]

A.D. 1866, December 6.—N° 3215.

DARLING, JOHN.—"An improved penholder and means of "supplying ink to pens." The holder is tubular, and inside it is a piece of elastic tube. The top of the holder is expanded to form a cistern for the reception of the ink; it is fitted with a cap, the "central conical part" of which is composed of the same substance as the inner tube. A portion of the holder is cut away to allow a part of the inner tube to project and be pressed by the thumb or finger. A "small distributing tube" carries a supply of ink from the inner tube to the nib. In a modification the holder is of the same diameter throughout. The cap is fitted with a moveable head having an elastic pad inside. On the holder is a sliding shield, which slips over the exposed part of the inner tube when the pen is not in use. In either arrangement the nib may be protected by a sheath. If the ink should not flow freely, an occasional pressure on the elastic part or moveable head of the caps "will completely maintain the flow of ink "until the supply in the reservoir is exhausted."

[Printed, 6d. Drawing.]

A.D. 1866, December 19.—N° 3337.

PERRY, STEPHEN, and PERRY, JOSEPH JOHN.—"Improve-"ments in inkstands or vessels used for containing and supply-"ing ink." The patentees prefer making their inkstands and bottles of "glass or earthenware, or china, or of material not "prejudicially acted on by ink." Several modifications are described. The first consists of a reservoir, a dipping cup having a tube which descends nearly to the bottom of the reservoir, and a socket in which is fitted an elastic stopper, cylindrical on the

exterior, having a flange at the top, and hollow inside "to render "it sufficiently yielding to adapt itself to any irregularities in "the socket." In the second, the dipping cup is arranged to pass through the stopper. In the third, the stopper, cup, and tube are moulded in one piece of vulcanized rubber. In the fourth, the tube is connected to the cup by means of vulcanized rubber, "so that its end may remain at the bottom of the ink "reservoir notwithstanding the movement of the dipping cup;" or the tube may be omitted, and the rubber may be lengthened to supply its place. In the fifth, the inkstand acts "on the bird "fountain principle." The stopper is inserted into an opening below the cup; it is cut away on one side, so that "by turning "it round," or "by moving it a distance endways," the communication between the cup and the reservoir may be opened or closed. The patentees also "combine hollow elastic stoppers with "openings at the side" with bottles for storing ink. The bottle has a spout on one side of the neck, and an air-hole at the other; the stopper "is cut away or perforated so as in one position to "leave the passages free, and in another to close them liquid-"tight." In another arrangement, a passage is formed through the stopper. The bottle may have a screw thread moulded on its neck, and the stopper a corresponding thread upon it and a "flexible delivery tube or nozzle." Corresponding air holes must be made in the neck of the bottle and in the stopper.

[Printed, 8*d*. Drawing.]

A.D. 1866, December 21.—N° 3367.

WEBER, MICHAEL.—"Improved apparatus for setting steel "pens," enabling writers "to set their steel pens to suit their "different styles of writing and to utilize writing pens which are "now supposed to be worn out." A slip of Arkansas or other cutting stone having a fine grain is mounted in a swivel frame, the ends of which are spherical and carried by pins "capable of "sliding in parallel guides formed in a rigid arched frame." In the centre of the arch is a bearing for the fulcrum of a rock lever, near the upper end of which is a rest for the pen handle, and at the lower end a socket to receive the nibs. A spring, fitted in the socket, holds the nibs firmly in place. The swivel frame receives a tendency to move upwards or downwards from coiled *springs in the* hollow arms of the arched frame, according as the

springs are placed below or above the guides. The arrangement of the springs depends on whether the arched frame is mounted on a stand or made with a ring at its base for holding it in the hand. "To render the instrument applicable to the finishing of "the setting of drawing pens" the socket must be slightly modified in form, "and it may with advantage be slit to enable "it to open and receive nibs of various sizes."

[Printed, 6*d*. Drawing.]

INDEX OF SUBJECT MATTER.

[The numbers refer to the pages in which the Abridgments commence. The names printed in *Italic* are those of the persons by whom the inventions have been communicated to the Patentees.]

LONDON :
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ERRATA.

Page xvii of Introduction, line 12 from bottom, *for* "Collins of Arundel Castle" *read* "Colyns of Tywardreth, Cornwall, preserved in Wardour Castle."

Page 24, line 5 from bottom, *for* "Mordon" *read* "Mordan."

Page 182, line 15 from bottom, *for* "Derrieiy" *read* "Derriey."

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